MAY/FY06

BADGER ARMY AMMUNITION PLANT

Wisconsin

Army Defense Environmental Restoration Program Installation Action Plan

Final 7 September 2006

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Cleanup Program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern, and proposes a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, US Army Environmental Center (USAEC), Badger Army Ammunition Plant (BAAP), Base Realignment and Closure (BRAC) Division, executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules and tentative budgets for all Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

The following agencies contributed to the formulation and completion of this Installation Action Plan during a planning workshop held on 2-3 May 2006:

Company/Installation/Branch
Army at BAAAP
Army Base Realignment and Closure (BRAC) Rock Island Field Office, Rock Island, IL
Citizens for Safe Water Around Badger (CSWAB)
Engineering and Environment, Inc. for USAEC
Ho-Chunk Nation
MCA
Shaw E & I for BAAAP
SpecPro, Inc. at Badger Army Ammunition Plant (BAAAP)
USACE, Omaha, NE
US Army Environmental Center (USAEC)
Wisconsin Department of Natural Resources (WDNR)

Acronyms & Abbreviations

AEC	Army Environmental Center
AEDB-CC	Army Environmental Data Base-Compliance-Related Cleanup
AEDB-R	Army Environmental Data Base-Restoration
AR	Army Regulation
AST	Aboveground Storage Tank
BAAAP	Badger Army Ammunition Plant
BAAP	Badger Army Ammunition Plant
BIA	Bureau of Indian Affairs
BIG	Badger Intergovernmental Group
BRAC	Base Realignment and Closure
CC	Compliance-Related Cleanup
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMI(C)	Corrective Measures Implementation (Construction)
CMI(O)	Corrective Measures Implementation (Operations)
CMS	Corrective Measure Study
CS	Confirmation Sampling
DNT	Dinitrotoluene
EEI	Engineering and Environment Incorporated
EPA	United States Environmental Protection Agency
ER,A	Environmental Restoration, Army (formally called DERA)
FS	Feasibility Study
FY	Fiscal Year
GSA	General Services Administration
GIS	Geographical Information System
HCN	Ho-Chunk Nation
IAP	Installation Action Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LTM	Long-Term Management
LTO	Long-Term Operations
MMRP	Military Munitions Response Program
NC	Nitrocellulose
NE	Not Evaluated
NG	Nitroglycerine
NPL	National Priority List
NR	Wisconsin Natural Resources Code of Regulations
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyl
POL	Petroleum, Oil & Lubricants
PP	Proposed Plan
ppb	parts per billion
ppm	parts per million
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)

Acronyms & Abbreviations

RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
RIP	Remedy-in-Place
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SVOC	Semi-Volatile Organic Compounds
TAPP	Technical Assistance for Public Participation
TCE	Trichloroethylene
TRC	Technical Review Committee
TSCA	Toxic Substances Control Act
USACHPPM	US Army Center for Health Promotion and Preventative Medicine
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Center
USAEHA	US Army Environmental Hygiene Agency (replaced by USACHPPM)
USATHAMA	US Army Toxic and Hazardous Material Agency (replaced by USAEC)
USDA	United States Department of Agriculture
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compounds
WDNR	Wisconsin Department of Natural Resources

Acronyms & Abbreviations

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA) Acronym Conversions

CERCLA		RCRA
PA Preliminary Assessment	=	**RFA** RCRA Facility Assessment
SI Site Inspection	=	**CS** Confirmation Sampling
RI/FS Remedial Investigation/ Feasibility Study	=	**RFI/CMS** RCRA Facility Investigation/Corrective Measures Study
RD Remedial Design	=	**DES** Design
RA(C) Remedial Action (Construction)	=	**CMI(C)** Corrective Measures Implementation (Construction)
RA(O) Remedial Action (Operations)	=	**CMI(O)** Corrective Measures Implementation (Operations)
LTM Long-Term Management	=	**LTM** Long-Term Management
IRA Interim Remedial Action	=	**IM** Interim Measure

Installation Information

Installation Locale: The Badger Army Ammunition Plant (BAAAP or Badger) site is located on 7,354 acres of land in Sauk County, Wisconsin. It is bordered on the north by Devil's Lake State Park, on the east by farmland, State Highway 78, and the Wisconsin River, on the south by farmland, and on the west by US Highway 12. Badger is approximately 9 miles south of Baraboo (pop. 10,771), and 7 miles north of Sauk City and Prairie du Sac (pop. 3,109 and 3,231 respectively). Bluffview, a residential area with approximately 600 residents, is located directly west across Highway 12 from Badger's main gate. On Badger's east side, between Highway 78 and the Wisconsin River, are several unincorporated residential developments with a projected population of 1,000 people when fully developed.

Installation Mission: To prepare the property for transfer outside Army control.

Lead Organization:
Base Realignment and Closure Division

Lead Executing Agency:
US Army Environmental Center, Installation Restoration Division, Branch A

Regulatory Participation
Federal: US Environmental Protection Agency, Region V
State: Wisconsin Department of Natural Resources and Wisconsin Division of Health

National Priorities List (NPL) Status: Non-NPL with confirmed off-post contamination. RCRA Part B permit issued 1988, modified in January 1996, renewed 1998, cancelled by Army in 2001.

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status
In 1993 the Badger Environmental Board of Advisors (BEBA) was formed to provide a venue for citizens to participate in the cleanup program at the installation. The BEBA members transitioned to an expanded, regulatory-compliant RAB in January 2001 and continue to meet and advise the Army on restoration issues. A TAPP consultant was hired in 2003, 2004, 2005, and 2006 to assist the RAB members in reviewing technical documents.

Installation Program Summaries
IRP
Primary Contaminants of Concern: Arsenic, Chlorinated Solvents, Chlorinated VOCs, Copper, Dinitrotolulene (DNT), Explosives, Fuel Oil, Heavy Metals, Lead, Mercury, Metals, Nitrates, PCBs, Solvents, Sulfates, Zinc
Affected Media of Concern: Groundwater, Soil, Sediments
Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 2008/2013
Funding to date (up to FY05): $126,031K
Current year funding (FY06): $13,396.8K
Cost-to-Complete (FY07+): $61,146K

Projected Date of Final Transfer of Property:

September 2004
- Parcels A, B, C, D, E, F

August 2005
- Parcels G, I

September 2006
- Parcels K, K1, K2, K3, L, M, N, W
- Parcels M3, O2, O6
- Parcels O, O1, O3, O5, O7, X1
- Parcels P1, P2, Q2, U2
- Parcels P4, P5, S2, V
- Parcel DOT right of way

September 2007
- Parcel R1
- Parcels K4, V2, V3
- Parcels Q1, Q3

September 2008
- Parcels O4, U3, X2
- Parcels M2, S3, Y
- Parcels R2, T

September 2009
- Parcel M1, P3, R,

September 2009
- Parcel H, J,

September 2010
- Parcel V1

Transfer Summary

Total Installation Acres: from SpecPro/Badger GIS

Transferring Acres: from SpecPro/Badger GIS

PARCEL A
North River Corridor Buffer

Parcel Size: 87.91 Acres
Associated Sites:
BAAP-012
BAAP-043
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/28/2004
Current Land Use: Agriculture
Future Land Use: Agriculture
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The transfer is complete.

PARCEL B
South River Corridor Buffer

Parcel Size: 55.05 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/28/2004
Current Land Use: Agriculture
Future Land Use: Agriculture
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The transfer is complete.

PARCEL C
Southeast Corner

Parcel Size: 115.33 Acres
Associated Sites:
BAAP-001
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/28/2004
Current Land Use: Agriculture
Future Land Use: Agriculture
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The transfer is complete.

PARCEL D
North and East Magazines

Parcel Size: 1,796.68 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-025 (RC 199008)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/28/2004
Current Land Use: Agriculture
Future Land Use: Agriculture
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The transfer is complete.

PARCEL DOT
DOT Right of Way

Parcel Size: 58.31 Acres
Associated Sites:
BAAP-001 (See Parcel C)
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: Proposed Hwy 78 project
Future Land Use: Proposed Hwy 78 project
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: DOT
Other Issues Affecting Transfer: The transfer is planned for September 2006.

PARCEL E
South Buffer

Parcel Size: 12.24 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/28/2004
Current Land Use: Agriculture
Future Land Use: Agriculture
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The transfer is complete.

PARCEL F
Southwest Corner

Parcel Size: 20.12 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/28/2004
Current Land Use: Agriculture
Future Land Use: Agriculture
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The transfer is complete.

PARCEL G
Conservation Club Area

Parcel Size: 44.73 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-G-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 8/30/2005
Current Land Use: Agriculture
Future Land Use: Agriculture
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The transfer is complete.

PARCEL H
Propellant Burning Grounds

Parcel Size: 74.24 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-033
BAAP-034 (RC 199805)
BAAP-035 (RC 199812)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 09/30/2009
Current Land Use: storage and explosive decontamination of metal equipment
Future Land Use: Agriculture
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The decontamination oven must operate until the demolition of all the other parcels is complete.

PARCEL I
Landfill #2 Area

Parcel Size: 16.67 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 8/30/2005
Current Land Use: closed landfill
Future Land Use: closed landfill/wildlife area
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The transfer is complete.

PARCEL J
Inert Disposal Area

Parcel Size: 9.9 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-J-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 12/25/2009
Current Land Use: disposal of inert materials
Future Land Use: wildlife area
Leases/Permits/Licenses: See list of binding agreements
Transfer Strategy: Federal to Federal
Recipient: USDA
Other Issues Affecting Transfer: The Army needs this site for inert disposal until demolition is complete.

PARCEL K
Northeast Corner

Parcel Size: 1,226.57 Acres
Associated Sites:
BAAP-003 (RC 199512)
BAAP-004 (RC 199512)
BAAP-012 (See Parcel A)
BAAP-039 (RC 199808)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: wildlife, agriculture, clay and sand borrow
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL K1
Landfill #5

Parcel Size: 12.31 Acres
Associated Sites:
BAAP-004 (RC 199512)
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: closed landfill/wildlife
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA. WDNR concurrence on landfill management must be achieved.

PARCEL K2
Deterrent Burning Ground

Parcel Size: 17.29 Acres
Associated Sites:
BAAP-006
BAAP-012 (See Parcel A)
BAAP-015 (RC 199008)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/1/2006
Current Land Use: closed remediation site with long term maintenance requirements.
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA. Long term maintenance must be agreed upon with WDNR.

PARCEL K3
Wood Duck Pond

Parcel Size: 1.15 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: wildlife area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: : Section 106 Consultation must be completed by GSA.

PARCEL K4
East Ball Powder® Pilot Plant

Parcel Size: 8.66 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-K-401 (Proposed)
CC-O-701 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2007
Current Land Use: inactive propellant manufacturing area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA. Building demolition must be completed.

PARCEL L
River Corridor

Parcel Size: 199.29 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed))
Transfer Date: 2/1/2006
Current Land Use: agriculture, wildlife area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL M
North Magazines

Parcel Size: 400.8 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed))
Transfer Date: 9/1/2006
Current Land Use: wildlife area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL M1
Settling Ponds & South Magazine Area

Parcel Size: 163.04 Acres
Associated Sites:
BAAP-001 (See Parcel C)
BAAP-012 (See Parcel A)
BAAP-027 (RC 199008)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2009
Current Land Use: wildlife area, remediation area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 consultation must be completed by GSA Settling ponds clean-up requirements need to be determined.

PARCEL M2
Geotube Laydown Area

Parcel Size: 17.95 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-040
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2008
Current Land Use: monofill for dredging sediments
Future Land Use: closed monofill/ park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: This area is needed for disposal of Gruber's Grove Bay dredged sediment in 2006. It will be covered and closed in 2007. Section 106 Consultation must be completed by GSA.

PARCEL M3
Thoelke Cemetery

Parcel Size: 1 Acre
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: inactive cemetery maintained by Army
Future Land Use: active cemetery operated by cemetery association
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Reversion
Recipient: Town of Sumpter
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL N
River Pump

Parcel Size: 4.6 Acres
Associated Sites:
CC-Z-002 (Proposed)
Transfer Date: 9/01/2006
Current Land Use: inactive water pumping station for installation process water.
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106
Consultation must be completed by GSA.

PARCEL O
Northwest Corner

Parcel Size: 355.2 Acres
Associated Sites:
BAAP-002 (RC 200204)
BAAP-012 (See Parcel A)
BAAP-021 (RC 199008)
BAAP-031 (RC 199008)
BAAP-032 (RC 199008)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/01/2006
Current Land Use: wild life area
Future Land Use: buffalo grazing, cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL O1
Filtration Plant

Parcel Size: 2.6 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/01/2006
Current Land Use: inactive water filtration plant
Future Land Use: buffalo grazing, cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA. Closure application must be approved by WDNR for a former UST site.

PARCEL O2
Miller Cemetery

Parcel Size: 0.01 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/01/2006
Current Land Use: inactive cemetery maintained by Army
Future Land Use: cemetery
operated by cemetery association
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Reversion or Public Benefit Conveyance (PBC)
Recipient: Town of Sumpter
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL O3
Ballistics Range

Parcel Size: 12.66 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-O-301 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/01/2006
Current Land Use: rocket motor static firing
Future Land Use: buffalo grazing and cultural activities, possible continued rocket motor static firing by contractor.
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL O4
Solvent Recovery Still

Parcel Size: 10.01 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-022 (RC 199008)
BAAP-029 (RC 199008)
CC-O-401 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2008
Current Land Use: inactive propellant production area
Future Land Use: buffalo grazing and cultural activites
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA. Army must demolish explosive contaminated buildings.

PARCEL O5
Cannon Range

Parcel Size: 16.03 Acres
Associated Sites:
BAAP-001 (See Parcel C)
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: inactive propellant test area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL O6
Pioneer Cemetery

Parcel Size: 2.05 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/1/2006
Current Land Use: inactive cemetery maintained by Army
Future Land Use: active cemetery operated by cemetery association
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Reversion
Recipient: Town of Sumpter
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL O7
West Ball Powder® Pilot Plant

Parcel Size: 33.04 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-020 (RC 199008)
CC-K-401 (Proposed)
CC-O-701 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: inactive propellant manufacturing area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA

PARCEL P1
Historic Shops Area

Parcel Size: 78.06 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-001 (See Parcel C)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: inactive propellant production support area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 consultation must be completed by GSA.

PARCEL P2
Rocket Paste Area

Parcel Size: 163.2 Acres
Associated Sites:
BAAP-008 (RC 200304)
BAAP-012 (See Parcel A)
CC-P-201 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: inactive propellant manufacturing area
Future Land Use: buffalo raising and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 consultation must be completed by GSA

PARCEL P3
New Acid & NG

Parcel Size: 71.85 Acres
Associated Sites:
BAAP-010 (RC 199808)
BAAP-012 (See Parcel A)
BAAP-013 (RC 199008)
BAAP-016 (RC 199008)
BAAP-032 (See Parcel O)
CC-P-301 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2009
Current Land Use: inactive nitroglycerine production area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other issues affecting transfer: Section 106 Consultation must be completed by GSA. A method for decontaminating the buildings must be determined.

PARCEL: P4
NG Pond Area

Parcel Size: 47.24 Acres
Associated Sites:
BAAP-005 (RC 200012)
BAAP-012 (See Parcel A)
CC-P-401 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: grazing and wildlife
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other issues affecting transfer: Section 106 Consultation must be completed by GSA.

PARCEL: P5
Railroad Scale Area

Parcel Size: 77.73 Acres
Associated Sites:
BAAP-005 (RC 200012)
BAAP-012 (See Parcel A)
CC-P-401 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2005
Current Land Use: rail scale house and temporary car storage
Future Land Use: rail scale house and park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other issues affecting transfer: Section 106 Consultation must be completed by GSA.

PARCEL Q1
Box Wash Area

Parcel Size: 32.31 Acres
Associated Sites:
BAAP-42
BAAP-012 (See Parcel A)
BAAP-024 (RC 199008)
CC-Q-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed))
Transfer Date: 9/30/2007
Current Land Use: inactive propellant production support area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other issues affecting transfer: Section 106 Consultation must be completed by GSA. Building demolition must be completed. Soil remediation actions at the Box Wash area must be completed.

PARCEL Q2
B & C Line Rest Houses

Parcel Size: 146.38 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-024 (RC 199008)
CC-Q-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed))
Transfer Date: 9/30/2006
Current Land Use: Inactive propellant production area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other issues affecting transfer: Section 106 Consultation must be completed by GSA.

PARCEL Q3
B & C Line Central Area

Parcel Size: 210.35 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-024 (RC 199008)
CC-Q-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed))
Transfer Date: 9/30/2007
Current Land Use: inactive propellant production area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other issues affecting transfer: Section 106 Consultation must be completed by GSA.

PARCEL R
Production Support & Labs

Parcel Size: 156.84 Acres
Associated Sites:
BAAP-011 (RC 199512)
BAAP-012 (See Parcel A)
BAAP-025 (See Parcel D)
BAAP-030 (RC 199008)
BAAP-037
BAAP-038 (RC 199612)
CC-R-001 (Proposed)
CC-R-002 (Proposed)
CC-R-003 (Proposed)
CC-R-004 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 09/30/2009
Current Land Use: inactive propellant production and active support area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other issues affecting transfer: Section 106 Consultation must be completed by GSA.

PARCEL R1
Old Acid Area

Parcel Size: 12.14 Acres
Associated Sites:
BAAP-009
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2007
Current Land Use: inactive acid production area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other issues affecting transfer: Section 106 Consultation must be completed by GSA. Soil remediation activities must be completed.

PARCEL R2
Well #1

Parcel Size: 1.01 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 12/31/2008
Current Land Use: drinking water well for installation and backup for Bluffview community
Future Land Use: Badger Sanitary & Water District drinking water well
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: US Health and Human Services for Bluffview Sanitary District
Other issues affecting transfer: Bluffview Sanitary District must demonstrate competence and financial responsibility before the transfer can be completed.

PARCEL S2
Metal Rest Houses

Parcel Size: 112.09 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-030 (See Parcel O)
CC-S-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2006
Current Land Use: inactive propellant manufacturing area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA

PARCEL S3
Ball Powder® Area

Parcel Size: 121.96 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-030 (See Parcel O)
CC-S-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2008
Current Land Use: Inactive propellant manufacturing area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA. A method for decontaminating the buildings must be determined.

PARCEL T
Bluffview Sanitary District

Parcel Size: 164.01 Acres
Associated Sites:
BAAP-001 (See Parcel C)
BAAP-012 (See Parcel A)
BAAP-024 (See Parcel Q)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 12/31/2008
Current Land Use: discharge of treated sanitary wastewater and stormwater
Future Land Use: discharge of treated sanitary wastewater and stormwater
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: US Health and Human Services for Bluffview Sanitary District
Other Issues Affecting Transfer: Bluffview Sanitary District must demonstrate competence and financial responsibility before the transfer can be completed.

PARCEL U2
D & E Lines Rest Houses

Parcel Size: 79.19 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-024 (See Parcel Q)
BAAP-042
CC-U-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/15/2006
Current Land Use: inactive propellant production area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other issues affecting transfer: Section 106 Consultation must be completed by GSA.

PARCEL U3
D & E Lines Central Area

Parcel Size: 110.26 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-024 (See Parcel Q)
BAAP-042
CC-U-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/15/2008
Current Land Use: inactive propellant production area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other issues affecting transfer: Section 106 Consultation must be completed by GSA.

PARCEL V
East and West Rocket

Parcel Size: 627.45 Acres
Associated Sites:
BAAP-43
BAAP-012 (See Parcel A)
BAAP-026 (RC 199108)
BAAP-036 (RC 200308)
CC-V-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 6/30/2007
Current Land Use: inactive propellant production area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: National Park Service for WDNR
Other issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL V1
Landfill #6

Parcel Size: 71.56 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-014 (RC 199008)
CC-V-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 7/05/2012 (or as long as needed by the Army)
Current Land Use: active permitted demolition landfill for Badger operated by Army
Future Land Use: active permitted demolition landfill for other land managers at Badger, operated by WDNR
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Negotiated Sale
Recipient: WDNR
Other Issues Affecting Transfer: This site is required to support on-going demolition throughout the plant. Alternative dumping off-site is cost prohibitive. WDNR must agree to take over operations, or Army must close landfill before land transfer.

PARCEL V2
West Rocket Roll Houses

Parcel Size: 22.15 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-026 (RC 199108)
BAAP-036 (RC 200308)
CC-V-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2007
Current Land Use: inactive propellant production area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: National Park Service for WDNR
Other issues Affecting Transfer: Section 106 Consultation must be completed by GSA. Building demolition must be completed.

PARCEL V3
East Rocket Roll Houses

Parcel Size: 23.19 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-026 (RC 199108)
BAAP-036 (RC 200308)
CC-V-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2007
Current Land Use: inactive propellant production area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: National Park Service for WDNR
Other issues Affecting Transfer: Section 106 Consultation must be completed by GSA Building demolition must be completed.

PARCEL W
Southwest Corner

Parcel Size: 47.43 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-033 (See Parcel H)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/01/2006
Current Land Use: restored prairie
Future Land Use: restored prairie
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA

PARCEL X1
Open Space

Parcel Size: 54.39 Acres
Associated Sites:
BAAP-012 (See Parcel A)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/01/2006
Current Land Use: wildlife area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA.

PARCEL X2
B and C Nitrocellulose Lines

Parcel Size: 79.41 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-023 (RC 199008)
CC-X-201 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2008
Current Land Use: inactive propellant production area
Future Land Use: buffalo grazing and cultural activities
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: BIA for Ho-Chunk
Other Issues Affecting Transfer: Section 106 Consultation must be completed by GSA. A method for decontaminating the buildings must be determined.

PARCEL Y
Ball Powder® & D, C, & F Nitrocellulose Areas

Parcel Size: 124.84 Acres
Associated Sites:
BAAP-012 (See Parcel A)
BAAP-022 (See Parcel S)
CC-Y-001 (Proposed)
CC-Z-001 (Proposed)
CC-Z-002 (Proposed)
Transfer Date: 9/30/2009
Current Land Use: inactive propellant production area
Future Land Use: park land
Leases/Permits/Licenses: See list of binding agreements.
Transfer Strategy: Public Benefit Conveyance (PBC)
Recipient: WDNR
Other Issues Affecting Transfer: A method for decontaminating the buildings must be determined. Section 106 Consultation must be completed by GSA.

Cleanup Program Summary

Installation Historic Activity: Badger was constructed in 1942 in Sauk County, Wisconsin, near the city of Baraboo. The plant was operated intermittently over a 33-year period to produce single- and double-base propellant for cannon, rocket, and small arms ammunition. Plant operation was terminated in March 1975 and all production facilities and many support functions were placed on standby status. Maintenance of standby facilities continued until 1998 when the Army declared Badger excess to its needs.

The 7,354-acre facility is being prepared for changes in ownership. General Services Administration (GSA) is the federal agency handling the property disposal. The proposed new owners are the US Department of Agriculture (USDA), the Bureau of Indian Affairs (BIA) for the Ho-Chunk Nation (HCN), the Wisconsin Department of Natural Resources (WDNR), and the Bluffview Sanitary and Water District.

IRP

Propellant Burning Ground (PBG)

Progress to Date

- The in-situ bio-treatment pilot system began operation in March 2000 and was expanded to a full scale system in the summer of 2000. Nutrient amendment addition and water infiltration from July 2003 to June 2006 further enhanced the in-situ biodegradation and flushing of DNT from the soils.
- The groundwater treatment facility was modified with a four additional extraction wells to more efficiently capture the plume of solvents and DNT.

Future Actions

- The WDNR is reviewing the alternative feasibility study that calls for removal of the biological treatment and infiltration system and capping of the waste pits as the final remedy for subsurface soils. Cap maintenance will be required indefinitely.
- The capture of contaminated water from the waste pits area and the main plume in the groundwater treatment systems until 2012 is the proposed final groundwater remedy.

Deterrent Burning Ground (DBG)

Progress to Date

- The DBG final remedy construction was completed in the fall of 2003 with installation of a subsurface bioremediation system under a RCRA cap. A passive air venting system was installed with soil moisture monitoring sensors.

Future Actions

- Moisture in the subsurface is currently being added and monitored. Respiration testing is being performed to monitor biodegradation under the RCRA cap. When the soil under the cap is fully saturated, the air venting and water infiltration under the cap will stop and the structures on the cap surface will be removed. Annual cap maintenance and monitoring will continue indefinitely.

Nitroglycerine Pond / Rocket Paste Area

Progress to Date

- Closure approval for both the NG Pond and Rocket Ditches sites was received from the WDNR on July 18, 2000.

Future Actions

- No further action is planned for the ponds or ditches in this area.

Settling Ponds / Spoils Disposal

Progress to Date

- A site-specific standards proposal for the Settling Ponds and Spoils Disposal Areas was completed and submitted to the WDNR on April 22, 2002.
- A soil column study demonstrating that DNT readily degrades in shallow soils was completed in February, 2005 and submitted to the WDNR.
- In 2006 an ecological risk assessment is being performed, per WDNR's 2005 request.

Future Actions

- Future actions to be determined after all data are evaluated from the data report submitted in May of 2001, the DNT degredation study, and the eco risk assessment.

Gruber's Grove Bay

Progress to Date

- The first round of dredging operations was completed in November 2001.
- Soil cover placement at the geotube laydown area (Parcel M2) began in 2002 and was completed in 2003.
- Samples obtained by the WDNR and analyzed by the State Hygiene Laboratory in the spring of 2003 indicated that elevated levels of mercury remain in the bay sediment.
- Additional sampling was conducted through the ice in January and February of 2004.
- In a May 2005 letter, WDNR required additional sediment dredging or studies to prove that the sediment can support a viable ecosystem. A contractor was hired to address the issue.

Future Actions

- A second dredging effort in the Bay is being done in Summer 2006 with confirmation sampling during dredging. A second layer of geotubes will be placed in the Parcel M2 laydown area.
- The geotube laydown area will be closed and covered in Spring 2007.

Ballistics Pond

Progress to Date

- The Ballistics Pond sediments were sampled to confirm mercury levels in the sediments in September 2000.
- A data report was prepared and submitted to the WDNR in October, 2000.
- A second, more detailed sediment sampling effort was completed in June 2001.
- A fish study was performed during the summer 2001 to determine possible impacts of mercury. The results for both the sediments and the fish indicated low levels of mercury, and were submitted along with a phase II field data report in March 2001.
- The WDNR responded on April 8, 2001, with a letter stating that the low mercury levels warrant no further action, and that the fish are adequately addressed under the state-wide fish advisory since the data were considered in line with other fish taken in south-central Wisconsin.
- The ditch connecting the pond with the water treatment facility was sampled in May 2003, and the results were obtained on August 18, 2003. A report recommending no further action was submitted to WDNR for review in February 2004. The WDNR concurred that no further action was required in January 2005.

Future Actions

- No further actions planned.

Oleum and Wood Duck Ponds, and Coal Yard

Progress to Date

- Field sampling was completed at the Oleum Pond for mercury and Coal Yard for heavy metals on August 27, 2002, and results were received on March 12, 2003 and December 9, 2002 respectively.
- Sediment sampling at the Wood Duck Pond for mercury was conducted on May 28, 2003, and the results were received on August 11, 2003. Reports for all three areas were prepared and submitted to WDNR for review in February 2004.
- The WDNR concurred with Badger's recommendations that no further action is warranted in these areas for metals contamination.
- WDNR determined coal residuals must be removed from the Coal Yard. Work was completed in 2006.

Future Actions

- No further remedial actions required. Coal Yard area is being evaluated as a clay borrow source.

Old Acid Area

Progress to Date

- Field sampling showed arsenic and lead in soil and under foundations.

Future Actions

- Foundation and soil removal planned for 2007.

Box Wash Area

Progress to Date

- Field sampling showed propellant in soils in ditches.

Future Actions

- Soil removal planned for 2007.

Cleanup Exit Strategy

See above summary of sites.

BADGER ARMY AMMUNITION PLANT

Installation Restoration Program

IRP Summary

Total AEDB-R IRP Sites/AEDB-R sites with Response Complete: 37/30

Different Site Types:

1 Above Ground Storage Tank	3 Burn Areas
4 Contaminated Buildings	2 Contaminated Groundwater
1 Contaminated Sediments	2 Disposal Pit/Dry Well
1 Explosive Ordnance Disposal Area	6 Landfills
1 Other	7 Spill Site Areas
2 Storage Area	3 Surface Impoundment/Lagoon
3 Surface Impoundment/Lagoons	1 Underground Storage Tank

Most Widespread Contaminants of Concern: Arsenic, Chlorinated Solvents, Chlorinated VOCs, Copper, Dinitrotolulene (DNT), Explosives, Fuel Oil, Heavy Metals, Lead, Mercury, Metals, Nitrates, PCBs, Solvents, Sulfates, Zinc

Media of Concern: Groundwater, Soil, Sediments

Completed Removal (REM)/Interim Remedial Action (IRA)/Remedial Action (RA):

RA - FY89 Existing Landfill closed & capped 130.0K (BAAP-004)
IRA - FY88-89 PBG GW Treatment Plant construction 2,201.3K (BAAP-33)
RA - FY91 Alternate water supply to two residents 95.3K (BAAP-012)
IRA - FY95 Soil removal/cover at PBG racetrack 573.3K (BAAP-34)
IRA - FY96 Modified GW Treatment Plant construction 7,431.6K (BAAP-33)
IRA - FY96 NG Pond berm construction 143.3K (BAAP-005)
RA - FY96 PCB soil at Transformer Yard removed 64.6K (BAAP-38)
RA - FY97 Replacement of third residential well 110.9K (BAAP-012)
RA - FY97 Landfill 1 capped 469.5K (BAAP-35)
IRA - FY98 SVE installed at PBG Waste Pits 537.8K (BAAP-33)
IRA - FY98 Bioventing installed at Powerhouse spill site 380.9K (BAAP-37)
RA - FY98 1949 Pit Capped 962.9K (BAAP-35)
RA – FY99 East & West Rocket Ditches soils removed 720.2K (BAAP-36)
RA – FY99 Nitroglycerine Pond soil removed & disposed (BAAP-005)
IRA – FY00 PBG and DBG soil removed & disposed (BAAP-006,33)
RA - FY02 Gruber's Grove Bay dredged (BAAP-40)
RA - FY03 DBG capped (BAAP-006)

Total IRP Funding

Prior years (up to FY05):	$126,031.0K
Current year funding (FY06):	$ 13,396.8K
Future Requirements (FY07+):	$ 61,146.0K
Total:	$200,573.8K

Duration of IRP

Year of IRP Inception: 1977
Year of IRP RIP/RC: 2008/2013
Year of IRP Completion including Long-Term Management (LTM): 2033

IRP Contamination Assessment

IRP Contamination Assessment Overview

Badger Army Ammunition Plant was built on farmland composed of up to 10 ft of clay silt (loess) topsoil over very permeable sand and gravel deposits. Studies conducted during the late 1970s and early 1980s discovered that materials such as propellant grains, DNTs, organic solvents, and acids had been released during production. Some contamination of surface soils and groundwater were found or suspected. A preliminary investigation and site assessment was conducted in 1987 and documented in the Master Environmental Plan for Badger AAP. Some volatile contaminants in the soil, such as the solvent carbon tetrachloride, had been carried by infiltrating precipitation down through the soil to the groundwater that is 90 to 110 feet below ground surface. The contaminants then moved with the groundwater, which generally flows to the south. Some contaminants, such as DNT (a burn rate modifier for propellants), are not as mobile and move slowly through the soil. Other non-mobile contaminants, such as lead, remain where they were deposited. Thus there are areas with contamination only in the top layers of soil, areas with soil contaminated from the top to varying depths or to the groundwater, and areas where the only problem is the contaminated groundwater moving through the subsurface soils. There are also ponds where pond water and bottom sediments have been affected by contaminants that were carried there in process discharge water.

Based on information developed during this preliminary assessment, the Wisconsin Department of Natural Resources (WDNR) issued an In-Field Conditions Report (IFCR) for Badger in September 1987. The IFCR contained requirements to conduct a Remedial Investigation/Feasibility Study (RI/FS). The IFCR has been modified by the state as necessary over the years to keep it current and address the latest findings and decisions regarding the installation cleanup program.

In 1988, the installation received a Hazardous Waste Operations License in accordance with the Resource Conservation and Recovery Act (RCRA) Part B permit process. Issued jointly by the US Environmental Protection Agency (EPA) Region V and the WDNR, it included specific requirements for an investigation at each of the potentially contaminated sites previously identified. It also provided for a phased study program based on a prioritized ranking. This was renewed in 1998.

Badger was nominated for the National Priority List (NPL) but was not listed. The remediation program is proceeding under the RCRA authority of the state and the EPA, but the terminology and investigative procedures follow CERCLA. There is joint oversight of the remedial efforts by EPA and WDNR, with WDNR taking the lead role.

The Remedial Investigation (RI) began at Badger in 1988. A plume of contaminated groundwater was discovered at the Propellant Burning Ground that appeared to be moving toward the installation boundary. To prevent the plume from moving off-site, an interim groundwater extraction, treatment, and discharge system was constructed. It began operating in May 1990.

IRP Contamination Assessment

In April 1993, the RI was completed for Badger. It identified the types, concentrations, and locations of contamination at the installation. The Feasibility Study (FS), completed in August 1994, looked at the possible ways to treat the contamination identified in the RI and recommended remedies for each site. The regulators agreed with the Army's recommendations for remedies. These have been incorporated into the In-Field Conditions Report modifications of June 1995 and the RCRA permit modification of January 6, 1996.

Other investigations after the RI/FS were completed revealed two additional sites where remedial work was required. One of these sites has been remediated; the other is in the construction phase.

Remedial design work began upon completion of the FS. Based on further investigations, the Army has developed new estimates of the extent of contamination and probabilities of success for the selected remedies for some sites. As a result, the Army received approval for changing the cleanup methods at the Nitroglycerine Pond, Rocket Paste Area, and East & West Rocket Ditches in FY98. In 2002, the Army received approval for changing the remedy at the Deterrent Burning Ground. A cap and in-situ bio-treatment system was installed in 2003.

The draft final Phase I RI report (January 1990) indicated that two plumes of contamination have migrated beyond BAAP boundaries. From the Propellant Burning Ground area, a plume of volatile organic compounds (VOCs), with carbon tetrachloride as the primary contaminant, has moved past the southern boundary. Concentrations of carbon tetrachloride at the southern boundary are as great as 210 parts per billion (ppb). From the Deterrent Burning Ground/Existing Landfill area, a sulfate plume has been detected past the eastern boundary. Concentrations of SO4 at the eastern boundary are as great as 640 ppm but concentrations in private wells outside the boundary are below the state preventive action level of 150 parts per million (ppm). Maximum regulatory levels are five ppb for carbon tetrachloride and 250 ppm for sulfate.

An off-post groundwater monitoring program was initiated in January 1990. In late April 1990, results of monitoring residential supply wells south of Badger showed that three private potable water wells had been contaminated with carbon tetrachloride and chloroform at levels as high as 80 ppb and 9.9 ppb, respectively. The locations of these wells confirm the expected groundwater movement from the modeling conducted as part of the Phase I RI. The VOC plume is flowing south from the Propellant Burning Ground Waste Pits, past the installation's southern boundary, then easterly to the Wisconsin River below the Wisconsin Power and Light dam. Two replacement wells were installed in December 1990 as a remedial measure. The third residence finalized their agreement with the Army in 1995, and the well replacement was completed in 1996. Prior to this, bottled water was provided. In the northeast area, private wells are being monitored and at this time do not show contamination attributable to Army sources.

The RI/FS effort was halted in September 1990 by USATHAMA due to laboratory fraud. The work resumed in 1991. A draft final RI Report was submitted to the regulatory

agencies in December 1992 and the final report was issued in April 1993. Of the 12 sites studied, six were recommended for no further action, and six for further study.

A draft final Feasibility Study was issued to the regulators for review in July 1993. This draft required several modifications due to Wisconsin's adopting new rules for site cleanups. The revised FS was published in August 1994, and accepted by the regulators and the public as final in 1995. The regulatory approvals, conditions and timeframes are contained in the In-Field Conditions Report from the state, modified 6/95, and in the RCRA permit modification issued jointly by the state and EPA on January 6, 1996. As each site has been more thoroughly investigated and better characterized since 1996, our understanding of site conditions has improved. Site specific remedies are being proposed that will fully protect human health and the environment.

Additional investigations are being performed in the production areas of the installation. These were not addressed in the original investigations in the early 1990s. As problems are identified, new sites will be added to the ER,A program.

Parcelization for Disposal

The US government acquired more than 10,000 acres to construct Badger AAP in the 1940s. Over the years acreage around the perimeter no longer needed for buffer zone or housing have been sold off or transferred to USDA. The USDA Dairy Forage Research Center was constructed in the 1970s on government land formerly managed by Badger. The USDA has used approximately 2000 acres of the remaining 7,354 Army-managed acres since that time for agricultural purposes. USDA requested control of those agricultural fields when Badger AAP was declared excess and received 1943 acres in September 2004.

GSA and Badger Army personnel divided the installation into parcels based on expected future ownership, types of buildings, and former or future uses. The acreage requested by USDA was modified based on discussions between USDA and WDNR before transfer. The WDNR requested acreage connecting Devil's Lake State Park on the north and the river by Dairy Forage Research Center. The Bureau of Indian Affairs (BIA) has approved the Ho-Chunk Nation's request for 1500 acres at Badger. The Bluffview Sanitary District was formed to take over operations of the sewer and wastewater treatment system currently serving the Bluffview residential community, as well as the installation. The WDNR has requested any remaining unclaimed acreage for a park through the National Park Service. The exact division of the remaining acreage among these requestors has not yet been determined.

IRP Cleanup Exit Strategy

Please see the transfer strategy for this information. Consultation with the Native American nations is ongoing.

Previous Studies

1973
- Air Pollution Engineering General Survey NO. 21-001-74 U.S. Army Environmental Hygiene Agency Oct. 15-17, 1973

1977
- Installation Assessment of BAAAP, May 1977.

1978
- Water Quality Special Study No. 24-0039-78, March 16, 1978.
- (Letter to Olin Corporation), December 19, 1978.

1980
- Closure Plan, Deterrent Burning Grounds, BAAAP, May 7, 1980.
- Preliminary Environmental Survey, BAAAP, May 7, 1980.

1981
- BAAAP Contamination Survey, Final Report, March 1981
- Engineering Report For Spill Prevention, Control, And Countermeasures Plan For Solvents, Fuel Oils, Gasoline, And Selected Hazardous Materials, December 23, 1981.

1982
- Phase 1, Hazardous Waste Management Special Study, DARCOM Open Burning/Open Detonation Grounds Evaluation, 1982.
- Geological And Soils Survey And Groundwater Monitoring Program, BAAAP, September 24, 1982.
- Subsurface Conditions, BAAAP, June 30, 1982.
- Groundwater Monitoring Results For Badger AAP - 23 July 1982

1983
- Environmental Assessment For Total Plant Operation BAAAP, May 1983.
- Establishment of Five Groundwater Monitoring Wells, Physical Analysis Of Soil Samples And Chemical Analysis Of Groundwater Samples, October 1983.
- Groundwater Monitoring Results For Badger AAP - 9 March 1983, 8 June 1983, 23 August 1983, 16 November 1983,

1984
- Groundwater Monitoring Results For Badger AAP, 4 January 1984, June 28, 1984.
- Near-Surface Soils Investigations at BAAAP, October 1984.

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- 2002 Groundwater Narrative Summary Report, Badger Army Ammunition Plant (CD), May 29, 2002.
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- Cover System and Wetland Construction, GGB Dredging Project, Badger Army Ammunition Plant (With Drawings) (CD), April 3, 2002.
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- Draft Alternative Feasibility Study, Deterrent Burning Ground, Waste Pits Subsurface Soil (CD) (Final), March 28, 2002.
- Draft Alternative Feasibility Study, Deterrent Burning Ground, Waste Pits Subsurface Soil, Badger Army Ammunition Plant, Revision 3 (CD) (Final), April 24, 2002.
- Draft ESTCP Demonstration Plan, Rocket Paste Production Buildings Investigation, Badger Army Ammunition Plant, Revision 2 (CD), April 11, 2002.
- ESTCP Draft Demonstration Plan, Rocket Paste Production Buildings Investigation, Badger Army Ammunition Plant (CD), January 16, 2002.
- Final Submittal, Addendum to the Comprehensive Field Sampling Plan, GGB Post-Dredge Sampling, Geotextile Tube Laydown Area (CD), February 13, 2002.
- Olin/Badger Army Ammunition Plant Quarterly Groundwater Sampling - March 2002 (CD), March 2002.
- Olin/Badger Army Ammunition Plant Quarterly Groundwater Sampling (CD), June 2002.
- Olin/Badger Army Ammunition Plant Quarterly Groundwater Sampling - September 2002 (CD), September 2002.
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- Phase 2 Investigation Report, Ballistics Pond Sediment Sampling (CD), February 2002
- Restoration Advisory Board - Minutes: 2/02, 6/02, 8/02, 11/02, 2001 & 2002

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- Sampling And Characterization Plan, Settling Ponds Spoils Disposal Site 1 And Final Creek - Revision 1 (CD), October 30, 2002.
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- Technical Memorandum, Deterrent Burning Ground, Phase I Field Investigation Results, Badger Army Ammunition Plant (CD), March 18, 2002
- USDA Evaluation of Suspect Soil At Fence Lines And Railroad Track, Badger Army Ammunition Plant, February 1, 2002.

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- Draft Corrective Measures, Implementation Report, Gruber's Grove Bay, Dredging Project (CD), December 30, 2003.
- Draft Groundwater Investigation Report, Deterrent Burning Ground (CD), January 3.
- Draft Letter Work Plan, Best System At The Propellant Burning Ground, April 24, 2003.
- Draft Racetrack Area Soils Investigation Report, Propellant Burning Ground, BAAAP (CD), January 9, 2003.
- Draft Startup Plan, Final Remedy Enhanced Biodegradation System, Deterrent Burning Ground, BAAAP (CD), June 26, 2003.
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- Exit Strategy Presentation & Alternative Costs Spreadsheet, Propellant Burning Ground (CD), September 3, 2003
- Feasibility Report, Expansion of Landfill Capacity Project, Badger Army Ammunition Plant (With Drawings), July 2003.
- Final Environmental Impact Statement (FEIS), March 13, 2003.
- Follow-Up Remedial Investigation, Badger Army Ammunition Plant (CD), September 30, 2003.
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- Letter Work Plan, Well Abandonment Activities, Badger Army Ammunition Plant, November 3, 2003.
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2003 (cont.)

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- Phase I, Final Report, Rocket Paste Production Buildings Investigation, Badger Army Ammunition Plant (CD), June 24, 2003.
- Restoration Advisory Board - Minutes: 2/03, 5/03, 9/03, Olin Corporation 2003
- Sampling, Characterization, And Modification Work Plan, Powerhouse Spill Site/Biovent System Project, BAAP (CD), January 7, 2003.
- Sampling, Characterization, And Modification Work Plan, Powerhouse Spill Site/Biovent System Project, BAAP - Revision 1 (CD), February 17, 2003.
- USDA Summary of Soil Sampling Activities - October 2002, USDA/Badger Army Ammunition Plant, January 8, 2003.

2004

- 2004 Groundwater Narrative Summary (CD), June 1, 2004.
- Addendum 7, Comprehensive FSP, Gruber's Grove Bay Residual Sediment Investigation - Revision 3 (CD), January 26, 2004.
- Addendum No. 2, Feasibility Report, Expansion of Landfill Capacity Project, Badger Army Ammunition Plant, February 2004.
- Badger Army Ammunition Plant Environmental Assessment Documents - March 2004, WDNR (Landfill Expansion Project) (CD), March 2004.
- Badger Army Ammunition Plant Environmental Site Assessment (CD), December 2004.
- Badger Army Ammunition Plant Groundwater Monitoring Wells Map (CD & Paper Copy), November 2004.
- Borrow Site Restoration Plan Submittal, Plan Of Operation Report, Expansion Of Landfill Capacity Project, Badger AAP, July 28, 2004.
- Closure Of The Badger Army Ammunition Plant (BAAAP) Hazardous Waste Storage Facility (EPA Id # Wi9210020054, LIC. # 3158), October 18, 2004.
- Comprehensive Field & Sampling Plan, Addendum 8, PBG, Subsurface Soil Investigation and Air Sparge Well Installation (CD), December 1, 2004.
- December 2003 Field Activities, Technical Memorandums For Deterrent Burning Ground & Propellant Burning Ground (CD), May 6, 2004.
- December 2004 Monitoring Well Results, Badger Army Ammunition Plant (CD), SpecPro, Inc., December 2004.
- Dept. Of Army Letter Requesting Closure Of Permitted One-Year Facility (6874-2) At Badger Army Ammunition Plant, September 29, 2004.
- Dept. Of Army Letter, Supplemental Information For Closure Of Permitted One-Year Facility At BAAP, October 14, 2004.
- Deterrent Burning Ground, Operations And Maintenance Manual For The Final Remedy Enhanced Biodegradation System (CD), April 15, 2004.

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- Draft Corrective Measures Implementation Report, Enhanced Biodegradation And RCRA Cap/Cover System DBG (CD), January 20, 2004.
- Emergency Coordinators Information, Spill Prevention, Control and Countermeasures Plan And Installation Spill Contingency Plan Letter, March 30, 2004.
- Emergency Coordinators Information, Spill Prevention, Control and Countermeasures Plan and Installation Spill Contingency Plan Letter, September 29, 2004.
- ESTCP Project Cu-0130, Characterization Of Contaminated DoD Building Foundations & Underlying Soils, BAAP (CD), September 27, 2004.
- Expansion of Landfill Capacity Project - WDNR License #03646 (Drawings), November 15, 2004.
- Finding Of Suitability to Transfer (FOST), Parcels K, L, M, N, And W, Badger Army Ammunition Plant, Baraboo, WI, July 2004.
- Follow-Up Remedial Investigation, Non ER,A Eligible Sites, Badger Army Ammunition Plant (CD), January 5, 2004.
- IRM/MIRM Process Flow Evaluation, Propellant Burning Ground, Badger Army Ammunition Plant (CD), August 12, 2004.
- Letter Work Plan, Revision 1, Box Wash Repair Area Subsurface Soil Investigation, Badger Army Ammunition Plant, October 13, 2004.
- MIRM Extraction Well Realignment, Propellant Burning Ground, Badger Army Ammunition Plant (CD), July 27, 2004
- Olin/Badger Army Ammunition Plant Quarterly Groundwater Sampling (CD), March 2004.
- Olin/Badger Army Ammunition Plant Quarterly Groundwater Sampling (CD), June 2004.
- Olin/Badger Army Ammunition Plant Quarterly Groundwater Sampling (CD), September 2004.
- Plan of Operation, Expansion of Landfill Capacity Project, Badger Army Ammunition Plant, May 2004.
- Request for Site Closure, Ballistics Ditches & Ballistics Pond, Badger Army Ammunition Plant (Letter), December 21, 2004.
- Request for Site Closure, Oleum Pond, Badger Army Ammunition Plant (Letter), December 21, 2004.
- Request for Site, Closure Coal Yard, Badger Army Ammunition Plant (Letter), December 21, 2004.
- Responses To Comments, Plan Of Operation Report, Expansion Of Landfill Capacity Project, Badger Army Ammunition Plant, June 16, 2004.
- Restoration Advisory Board (RAB) Minutes: March 1, 2004, May 17, 2004, July 19, 2004, September 13, 2004, and November 15, 2004. Olin Corporation/SpecPro Inc. 2004
- South Boundary Groundwater Investigation, Letter Work Plan, Revision 1, Badger Army Ammunition Plant, July 28, 2004.
- Submittal of Site Assessment Report, Laboratory Area (Solvent Investigation), Badger Army Ammunition Plant (Letter & CD), November 29, 2004.
- Submittal of Site Investigation Report, Request for Site Closure, Landfill #2, Badger Army Ammunition Plant (Letter & CD), November 29, 2004.

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- Submittal of Site Investigation Report, Request for Site Closure, Landfill #4, Badger Army Ammunition Plant (Letter & CD), December 28, 2004.
- Trap Range Report, Follow-Up Remedial Investigation Phase 2, Badger Army Ammunition Plant (CD), October 26, 2004.
- Trap Range, Badger Army Ammunition Plant, Case Summary And Close Out Request, Form 4400-202, October 26, 2004.
- Wastewater Facility Plan, Badger Army Ammunition Plant, June 2004.
- WDNR Letter, Closure For River Pump Station, September 3, 2004.
- WDNR Letter, Closure for Trap Range, November 12, 2004.

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- Application to Work on Highway Right-of-Way State Highway 78, Gruber's Grove Bay Dredging Project, Lake Wisconsin, Dept. of the Army, January 17, 2006.
- BAAAP Explosive Safety Submission, Final/ESS Addendum 1 (CD), MKM Engineers/ Shaw Environmental, Inc., Apr. 2002/Jan. 2005.
- Badger Army Ammunition Off-Post Contingency Plan (CD), Dept. of the Army, November 7, 2005.
- Ballistics Range Closure Request & Site Investigation & Remediation Report, Badger Army Ammunition Plant (Letter & CD) Dept. of the Army/SpecPro, Inc., December 1, 2005.
- Closure of Ballistics Range House (Letter), WDNR, December 13, 2005.
- Closure of Cannon Range Tunnels (Letter), WDNR, May 24, 2005.
- Closure for Wood Duck Pond (Letter), WDNR, March 31, 2005.
- Comprehensive Field Sampling Plan, GGB 2005 Residual Sediment Invest.(Rev 1), Draft Residual Sediment Invest. Rep., GGB (Rev 2) (CD), February 9, 2005.
- Comprehensive Field Sampling Plan, GGB 2005 Residual Sediment Invest.(Rev 2), Draft Residual Sediment Invest. Rep., GGB (Rev 2) (CD), March 3, 2005.
- Construction Documentation Report, Phase 1 Installation, Expansion of Landfill Capacity Project, BAAAP (CD), SpecPro, Inc., July 20, 2005.
- December 2005 Groundwater Certification & Exceedance Report, All Hits Report, Sampled Wells List, And Sampled Wells by Frequency Map (CD), SpecPro, Inc., December 2005
- Documentation of Annual Maintenance Activities 2005, Closed, Covered, and Capped Sites, Badger Army Ammunition Plant, (Letter), WDNR, January 30, 2006
- Draft, Asbestos Abatement, Demolition, And Disposal Specs, CQAP, Comp. SSHP, Drawings, East/West Paste & Ball Powder Areas (CD), January 14, 2005
- Draft Groundwater and Soil Investigation Report, Water's Edge Development, Badger Army Ammunition Plant (CD), Shaw Environmental Inc., September 2005.
- Draft, Operations and Maintenance Manual, Final Remedy Enhanced, Biodegradation System, Deterrent Burning Ground (CD) Shaw Environmental, Inc., April 14, 2004
- Draft Residual Sediment Investigation Report, Gruber's Grove Bay, Badger Army Ammunition Plant (CD), Shaw Environmental, Inc., August 16, 2005.
- Draft Sub-surface Soil Investigation Report, Box Wash Repair Area, Badger Army Ammunition Plant (CD), Shaw Environmental, Inc., September 9, 2005.

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- Draft Technical Memorandum (Rev. 1), Performance Assessment & Recommended Disposition of the Best System PBG, BAAAP (CD) Shaw Environmental, Inc. December 13, 2005
- Emergency Coordinators Information, Spill Prevention, Control and Countermeasures Plan and Installation Spill Contingency Plan Letter, Dept. of the Army, BAAAP, 10 March 2005.
- ESTCP Project CU-0130, Demonstration Plan, Revision 2 and Bench-Scale Study Work Plant (Rev 1), BAAAP (CD), Shaw Environmental, Inc., April 29, 2005.
- Fuel Tank at River Pump Station (Letter), WDNR, March 1, 2005
- Final Report on Residual Dinitrotoluenes in Settling Ponds & Spoils Disposal Area Soils at BAAAP: Microcosm & Soil Column Studies. S. Nishino, J. Spain, U. Tulsiani, J. Fortner, Georgia Institute of Technology/Badger Army Ammunition Plant, June 1, 2005.
- Groundwater Narrative Summary Report (CD), SpecPro, Inc, July 7, 2005.
- January 2005 Field Activities, Technical Memorandum, Propellant Burning Ground, Badger Army Ammunition Plant (CD), Shaw Environmental Inc., August 23, 2005.
- June 2005 Groundwater Certification & Exceedance Report, All Hits Report, Sampled Wells List, And Sampled Wells by Frequency Map (CD) SpecPro, Inc. June 2005
- Letter Work Plan (Rev 2), Monitoring Well Installation in the Windings Subdivision, Badger Army Ammunition Plant, Shaw Environmental Inc., September 23, 2005.
- March 2005 Groundwater Certifications and Exceedance Reports and All Hits Reports, Badger Army Ammunition Plant (CD), SpecPro, Inc., March 2005.
- New Acid Pond (Letter), WDNR, March 1, 2005
- RAB Minutes: February 7, 2005; April 4, 2005; June 6, 2005; September 19, 2005; And November 7, 2005 (CD), SpecPro, Inc., 2005
- Response to Comments, Construction Documentation Report, Phase 1 Installation, Expansion of Landfill Capacity Project, BAAAP Dept. of the Army/SpecPro, Inc., September 26, 2005.
- Site Assessment Report, New Acid Pond, Follow-Up Remedial Invest. BAAAP, Request To Modify Closure Conditions (Letter & CD), January 3, 2005.
- Southern Boundary Groundwater, Phase II Investigation Report, March 28, 2005.
- Startup Plan, MIRM Extraction Well Realignment, Propellant Burning Ground, March 23, 2005.
- Submittal Of Site Assessment Report, Request For Site Closure, Cannon Range, Badger Army Ammunition Plant (Letter & CD) Dept of the Army/SpecPro, Inc., April 18, 2005
- Submittal Of Site Assessment Report, Request For Site Closure, Wood Duck Pond, Badger Army Ammunition Plant (Letter & CD) January 24, 2005
- Submittal Of Site Assessment Report, UST Invest. Request for No Further Action, River Pump Station (Letter & CD), February 16, 2005.

2006

- Bench Scale Study Report, Verification of Field Test Methods for NC & NG – Spiked Samples of Soil & Building Materials (Rev. 1), BAAAP (CD), Shaw Environmental, Inc., April 6, 2006.

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- Draft Alternative Feasibility Study, Propellant Burning Ground Subsurface Soils, BAAAP (CD), Shaw Environmental, Inc., April 6, 2006.
- Draft Corrective Measures Implementation Report (Rev. 1), MIRM Extraction Well Realignment Project, BAAAP (CD), Shaw Environmental, Inc., April 10, 2006.
- Draft, Gruber's Grove Bay, 2006 Dredging Project Design & Permitting Documents (CD), Cape & Shaw Environmental, Inc., February 27, 2006
- Low Hazard Exemption for the Geotectile Tube Laydown Area, Gruber's Grove Bay Dredging Project (Letter), Dept. of the Army, February 6, 2006.
- No Action Required, DNT Burner (Letter), WDNR, January 5, 2006
- No Action Required, Fuel Oil Storage Area (Letter), WDNR, January 5, 2006
- No Action Required For Phthalate Storage Tanks (Letter), WDNR, February 1, 2006
- Oleum Landfill Closure Construction Documentation Report, Badger Army Ammunition Plant (Letter & CD), Dept. of the Army/SpecPro, Inc., March 2006.
- Proposed Dredging of Gruber's Grove Bay, Lake Wisconsin (Letter), Dept. of the Army, February 6, 2006
- September. 2005 Groundwater Certification & Exceedance Report, All Hits Report, Sampled Wells List, And Sampled Wells by Frequency Map (CD), SpecPro, Inc., September 2005
- Site Investigation Report, Oleum Ditch, Badger Army Ammunition Plant (Letter & CD), Dept. of the Army/SpecPro, Inc., March 2006.

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Approval	1/17/1992	WDNR	----------	1987 In-field Conditions Report Approval: General Groundwater Monitoring Conditions.
T	Approval	10/14/1993	WDNR	----------	Conditional High Capacity Well Approval (construction of high capacity non-potable BCW #4).
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Approval	10/30/1992	WDNR	----------	WDNR Plan Modification of September 14, 1987 In-Field Conditions Report Approval.
V1	Approval	10/5/2001	WDNR	----------	Disposal of Spent Liquid-Phase Carbon for the BAAAP Landfill, Lic. #3118.
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Approval	11/18/1992	WDNR	----------	October 30, 1992 Plan Modifications of the September 14, 1987 In-Field Conditions Report Approval - ERRATA SHEET.
D	Approval	11/27/2002	WDNR	----------	Pumping Rate Approval for SCW-1.
D	Approval	11/27/2002	WDNR	----------	Approval to change pumping rate from 125 to 210 gpm for SCW-1
P3	Approval	11/3/1993	WDNR	----------	Conditional High Capacity Well Approval (Operation of high capacity well #002)
V1	Approval	12/17/2003	WDNR	----------	Request to Dispose of Ash and Metallic Wastes, Change Monitoring and Daily Cover Frequency and to Use an Alternate Cover Material for the BAAAP Landfill, Lic. #03118.

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
V1	Approval	12/5/2000	WDNR	----------	Modification for a Re-designed Landfill Cap and Landfill Monitoring Requirements for the BAAAP Landfill, License #3118.
V1	Approval	12/5/2000	WDNR	----------	Plan of Operation Approval Modification For a Re-designed Landfill Cap and Landfill Monitoring Requirements for the BAAAP Landfill, Lic #3118.
N/A	Approval	2/14/2001	WDNR	----------	Waterway markers Approval
T	Approval	2/21/1990	WDNR	----------	For the Scope of Work and Final Design for the Interim Remedial Measures, Phase I and II Remedial Investigation/Feasibility Study Work Plans, and Approvals of Schedules for Work Required by the In-Field Conditions Report Approval at BAAAP.
T	Approval	2/21/2002	WDNR	9/30/2006	Permit modification for WPDES Permit No. WI-0043974-04
V1	Approval	2/9/2004	WDNR	----------	Disposal of Materials from Pilot Studies at the BAAAP Landfill, Lic.#2118.(3118?)
K1	Approval	3/1/1990	WDNR	----------	Landfill Gas Migration Monitoring Plan, existing Landfill (#2813).
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Approval	3/19/1992	WDNR	----------	WDNR Modifications to the September 14, 1987 In-Field Conditions Report Approval for the BAAAP.

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
N/A	Approval	3/9/2001	WDNR	----------	Wastewater Facilities Gruber's Grove Bay Dredging Project.
V1	Approval	4/13/1994	WDNR	----------	Plan of Operation Modification, Reclassification of Existing BAAAP Landfill to C&D Landfill and Exemption from RCRA Subtitle D Compliance, Lic. #3118.
V1	Approval	4/2/2003	WDNR	----------	Alternate Geotechnical Investigation Plan Approval: Badger Army Ammunition Plant - Expansion of Landfill Capacity (Monitoring #03636).(3646?)
T	Approval	4/29/2003	WDNR	----------	Modification ot the In-Fields Condition Report. Allowable downtime for the IRM/MIRM extended from 24 to 72 hours.
V1	Approval	5/27/2004	WDNR	----------	Disposal of Zeolite Resins from the Water Conditioning System at BAAAP Landfill License #3118
K2	Approval	6/16/2003	WDNR	----------	BAAAP PBG BEST System Micronutrient Addition.
H	Approval	6/23/1989	WDNR	----------	For construction and operation of 4 Groundwater Remediation Wells at the Propellant Burning Ground
T	Approval	6/5/1995	WDNR	----------	6 High Capacity Wells, MIRM 0001-006

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Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
N/A	Approval	6/6/2001	WDNR		Approval for Grubers Grove Bay Remedial Action
K2	Approval	7/13/2000	WDNR	----------	Full Scale Bioremediation Plan for the Propellant Burning Ground
	Approval	7/30/1987	WDNR	Closed in 1989	Plan of Operation Approval, BAAAP.
V1	Approval	7/31/2002	WDNR	----------	Disposal of Asbestos Containing material in the BAAAP landfill, Lic. #3118.
V1	Approval	7/8/1999	WDNR	----------	Construction Documentation Report for The Phase II Liner System for the BAAAP Landfill, Lic. #3118.
V1	Approval	8/12/2002	WDNR	----------	Change of DNR Identification Numbers for the BAAAP Landfill, Lic #3118.
V1	Approval	8/12/2004	WDNR	----------	Expedited Plan Modification for Enironmental monitoring - Propsed C & D Landfill ID # 03646
N/A	Approval	8/23/2001	WDNR	----------	Gruber's Grove Bay Dredging Project - approving additional acreage for spray field.
V1	Approval	8/3/2004	WDNR	----------	Plan of Operation Approval for C & D Landfill #3646
H	Approval	8/31/1999	WDNR	----------	In-Situ Bioremediation Pilot Study for the Propellant Burning Ground

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
D	Approval	9/18/1997	WDNR	----------	Application for Approval for High Capacity Extraction Well for the Source Control Well #002.
N/A	Approval Modification	3/1/2002	WDNR		Allow Hazard Waste Disposal Exemption for Gruber's Grove
V1	Certification	9/25/1995	WDNR		Landfill Operator Certification
D	Closure Letter	3/8/1999	WDNR	----------	Phase 1 cap construction report (1949 Pit Closure).
G	Closure Letter	11/12/2004	WDNR	----------	South Central Region Closure Committee determined that no additional action is required at the Trap Range.
H	Closure Letter	9/4/1996	WDNR	----------	Documents closure of the Hazardous Waste Thermal Treatment Unit (HWTTU) in the Propellant Burning Ground at BAAAP.
N	Closure Letter	9/3/2004	WDNR	----------	South Central Region Closure Committee determined that no additional action is required at the River Pump Station with respect to potential impacts due to lead based paint.
P3	Closure Letter	7/30/1987	WDNR	----------	Closure Documentation Approval, Neutralization/Stabilization Pond, New Acid Complex, BAAAP.
V	Closure Letter	10/18/2004	WDNR	----------	Confirms that the WDNR considers the BAAAP hazardous waste storage facility closed.

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
D,K,O5,S,T	COE Lease	5/15/1998	Howery Bee Keeping	2/29/2007	For agriculture.
V1	Completeness Determination	3/16/2004	WDNR	----------	Proposed C&D landfill - completeness Determination Regarding Feasibility Report.
V1	Completeness Determination	4/2/2003	WDNR	----------	Completeness Determination: Initial Site Report for the BAAAP - Expansion of Landfill Capacity (Monitoring # 03646).
V1	Correction	12/20/2000	WDNR	----------	WDNR Correction of the Plan of Operation Approval Modification for a Re-designed Landfill Cap and Landfill Monitoring Requirements for the BAAAP Landfill, License #3118.
V1	Correction	12/20/2000	WDNR	----------	Correction of the Plan of Operation approval Modification for a Re-designed Landfill Monitoring Requirements for the BAAAP Landfill, Lic #3118.
O3	CRDA Lease		Orbital Technologies Corporation (Orbitec)	6/31/2006	For testing rocket engines.
A, B, C, D, G, K, K1, T, V	Department of the Army License	Pending	Dairy Forage Research Center, Department of Agriculture	1 year	For agricultural grazing and cropping.
K2	Determination of Remedy	10/14/2002	WDNR	----------	Final Determination of Remedy for the Deterrent Burning Ground
T	Draft Approval of Scope of Work	5/6/1988		----------	For Interim Remedial Measures, RI/FS and Approval of Schedules for Work Required by Infield Condition Report at BAAAP.
T	Draft Modification and Approval	1/5/1990	WDNR	----------	For the Remedial Investigation/Feasibility Study Work Plans, the Preliminary Interim Remedial Measures Plans, and the Work Schedule - In-Field conditions Report Approval.

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
	Easement	12/29/1992	WI Power & Light	pending perpetual	Electric Transmission Wires, contract # DACA45-2-94-6024
	Easement	5/11/1988	WI Power & Light	pending perpetual	Buried natural Gas Pipeline, Right of Way, contract # DACA45-2-87-6177
DOT	Easement	5/9/1942	State of WI		Road, Right of Way, contract # 042-3
	Easement	6/18/1969	WI Gen Tel		Buried cable, Right of Way, contract # DACA22-2-69-114
W,C,E,(D?)	Easement	7/14/1993	GTE North & Suc		Fiber Optic Cable, Right of way, contract # DACA45-2-93-6060
P3	Federal Facilities Compliance Agreement	07/27/83 Amended 11/25/86			For Nitric Acid Production Unit.
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Final Review	9/14/1987	WDNR		For In-Field Conditions Reports at the BAAAP.
R	Laboratory Registration	First issued 08/22/86	WDNR	updated annually	
Q,Y,U,S,D, W,T,M,03,R 1,X2,X1,P1, P3,O,O1,K, R	Lease	1/1/1998	WSOR	Expired 6/30/04	railroad trackage, transit, contract # DACA45-1-98-6034
Q,Y,U,S,D, W,T,M,03,R 1,X2,X1,P1, P3,O,O1,K, R	Lease	1/11/2003	Railcar Associates	10/31/2004	Railroad Trackage, storage, contract #DACA45-1-04-600
P3	Lease	10/01/00	Agrilliance	9/30/2006	Tanks, intercon., pumping station, pipes; Fertilizer Storage, contract number DACA45-1-01-6091

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
R	Lease	6/1/2003	Civil Air Patrol	5/31/2008	Bldg 5557-5, storage, contract number DACA45-3-03-6038
Q	Lease	7/1/2000	Flambeau Corp.	6/30/2005	Bldg 6819, Storage, contract # DACA45-1-00-6076
Y	Lease	Pending	Mid-Continent Railroad Museum	1 Year	Building 4000N
R2	Lease	Pending	Bluffview Sanitary District	1 Year	BAAAP drinking water system
T	Lease	Pending	Bluffview Sanitary District	1 Year	Sanitary Waste Water Treatment Plant
V1	License	5/7/1993	WDNR	updated annually	Solid Waste Facility Operation License (#13087) For a Solid Waste Transporter.
Q	License	6/1/2003	Civil Air Patrol	5/31/2008	Bldg 6819, storage, contract # DACA45-3-03-6038.
V1	License	6/15/1989	WDNR	updated annually	Solid Waste Facility Operation License (#03118) for a landfill (50,000-,500,000 cubic yards).
N/A	MOA	10/1/2003	Badger History Group, BAAAP, Wisconsin State Historical Office, General Services Administration	Indefinite	For building demolition.
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Modification	12/28/2000	WDNR	----------	Groundwater Sampling Plan
T	Modification	5/14/2001	WDNR	----------	IRM system plans.

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
	Modified Consent Order	4/7/1994	WDNR	----------	For SO2. Consent order # 87-157003330-J02B
K	No further action	4/24/2002	WDNR	----------	No further investigation required at the Oleum Plant Landfill at this time. Recommended the area be included as part of a more comprehensive environmental analysis to be conducted as clean up and transfer activities continue.
O	No further action	4/8/2002	WDNR	----------	Response to report titled "Phase 2 Investigation Report, Ballistics Pond Sediment Sampling" prepared by Olin. WDNR states that no remediation of the pond is necessary to address Hg levels in fish.
	Notification	9/14/1992	WDNR	----------	Notification of Intent to Modify a Plan Approval, BAAAP, FID #157005530.
	Ozone - Depleting Refrigerant Handling Cert.	6/30/1995	DILHR	----------	
	PBC	8/31/2004	SpecPro, Inc.	3/31/2005	
ALL	Permit		WDNR	3/31/2006	Storm Water Discharge Permit (WI-S067857-2)
T	Permit	06/0/81 Amended 03/30/83	WDNR Bureau of Air Management	----------	Permit #M1A-11-DGP-81-57-024. For Construction and Operation of a Contaminated Waste Incinerator

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
N/A	Permit	3/21/2001	WDNR		Dredging Permit (3-SC-2000-57-4176LW) for Gruber's Grove Bay Remedial Action.
R2	Permit	6/19/1989	WDNR		High capacity well permit, reconstruction of Well #1
R	Permit	8/15/1989	Department of the Army		For Radioactive Material at the Laboratory (DARA-P-48-01-04).
K2	Permit Modification	8/1/2002	WDNR		Permit modification for the Deterrent Burning Ground.
K2	Permit Modification	8/23/2002	WDNR		Permit modification for the Deterrent Burning Ground.
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Plan modification	1/19/1993	WDNR	----------	Plan Modification of the September 14, 1987 In-Field Conditions Report Approval and October 30, 1992 Plan Approval Addendum.
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Plan modification	11/14/2000	WDNR	----------	Draft Groundwater sampling plan.
V1	Plan Modification	4/9/2004	WDNR	----------	Expedited Plan Modification for Environmental Monitoring - Landfill Lic. #3118 BAAAP.
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Plan modification	6/1/1995	WDNR	----------	Plan modification of the September 14, 1987 In-Field Conditions Report Approval: Approval of Corrective Measures Selected in the Final Feasibility Study Report/Corrective Measures Study Report for the BAAAP.

Binding Agreements

Parcel	Agreement Type/Description	Date	With Whom	Duration	Remarks
P2, V	Plan modification	8/28/1998	WDNR	----------	Plan Modification of the September 14, 1987 In-Field Conditions Report Approval for the Final Remediation at the NG Pond and Rocket Ditches.
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Plan modification	8/3/1998	WDNR	----------	Groundwater
H	Recommendation s/No further action	12/2/1997	WDNR	----------	Department recommended that the Army proceed with plans to remove TCLP hazardous material from Racetrack Area Waste Piles for proper treatment and disposal. No additional remedial action was required at the Refuse Pits located at the South End of the pro
A,C,D,F,H,K, K2,M,M1,M2 ,P2,P3,P4,R, S,T,U,V,V1, V2,W,Z2	Response	10/30/1992	WDNR	----------	Response to Comments Received by WDNR on draft "Plan Modification of the September 14, 1987 In-Field Conditions Report Approval."
V1	Response	6/14/2002	WDNR	----------	Expedited Plan Modification - Acknowledgement & Notice of Objection, BAAAP, Lic. No. 3118.
V1	Response	6/14/2003	WDNR	----------	Response to Expedited Plan Modification - Acknowledgement and Notice of Objection, BAAAP, License #3118.
T	Variance	10/30/2001	WDNR	----------	Variance to NR 141 for Barcad Wells at MIRM.

BADGER ARMY AMMUNITION PLANT

Installation Restoration Program

Site Descriptions

BAAP-001
SETTLING PONDS/SPOILS DISPOSAL AREA

SITE DESCRIPTION

The Settling Ponds are located along the installation's southern boundary and were first used in 1942. During the years of production, these man-made ponds received sanitary and industrial wastewater from the entire facility and surface runoff from the Nitroglycerine, Rocket Paste, and Magazine areas. Spoils removed during dredging operations were placed alongside the ponds. In situ soil stabilization/solidification and soil cover was the proposed remedial method in the 1994 FS. The currently impacted pond area is 67 acres and the spoils disposal areas are 21 acres. Soil sampling data, received in 2000 and submitted to the WDNR in a comprehensive analysis in the form of a Data Report in May of 2001, indicates dinitrotoluene (DNT) is present throughout the site, not in localized areas as was previously indicated. Nitroglycerine and mercury are present in isolated areas, primarily Spoils Site 1.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: Medium

CONTAMINANTS OF CONCERN: Explosives, Metals

MEDIA OF CONCERN: Soil, Groundwater

PHASES	Start	End
RFA	197701	197705
CS	197701	197705
RFI/CMS	198808	200712
DES	199501	200812
CMI(C)	200010	201109

RC: 201109

A site-specific soil cleanup standards proposal has been developed and was submitted to the WDNR for review and approval in May 2002. The proposal was developed in accordance with WDNR Chapter NR 700. Specifically, the proposal was developed following the guidance detailed in NR 720.19, which, among other things, recommends that the site-specific standards process be followed.

A follow-on Remedial Investigation was conducted in 2003 to determine the condition of the soil in production areas across the installation. In 2004, a field study was completed to quantify the degradation of dinitrotoluene in the vadose (unsaturated) soil under the Settling Ponds. In May 2005, WDNR directed the Army to perform further ecological risk assessment work. In 2005, based on WDNR comments on the original risk assessment, the Army began work on a reevaluation of the risk assessment.

Groundwater issues are currently being addressed under site BAAP-012.

Nine (9) additional monitoring wells were installed onsite in September 2004.

CLEANUP STRATEGY

In the spring/summer of 2006, an ecological risk assessment (ERA) field investigation will be conducted and the results of this investigation will be used to complete the baseline ecological risk assessment. USACHPPM is proposing a rodent sperm analysis, dependent on the rodent population.

An alternative FS will be completed to consider and evaluate cost-effective remedial alternatives.

The current budgeted action is soil cover over ~90 acres and excavation of Spoils Site 1.

Groundwater monitoring is tracked at BAAP-012 and cap and cover maintenance is tracked at BAAP-035.

BAAP-006
DETERRENT BURNING GROUND

SITE DESCRIPTION

The Deterrent Burning Ground was used as a demolition debris landfill and for the open burning of deterrents, structural timbers, asphalt shingles, cardboard, papers, and office waste. Deterrent is an organic liquid containing dibutyl-phthalate and DNT used to modify the burning characteristics of nitrocellulose. This two acre site existed as a borrow pit from the 1940s until the early 1960s. Deterrent was burned in this area only after mobilization for the Vietnam conflict, specifically 1972 - 1975. Aerial photographs show the area closed and covered by 1978.

Investigations (starting in 1996) showed the DNT spread laterally in the subsurface soils and reached groundwater. The remedy in the 1994 FS called for soil removal and soil washing, but treatability studies showed that soil washing would not work for the explosive compound (dinitrotoluene) in these soils.

In 1999 and 2000 the top 15 ft of soil in the pits was removed and disposed of off-site. This removed the surface soil contaminated with the highest DNT levels and metals. In 2001, the backfilled area was temporarily capped, and additional soil and groundwater studies were started to better understand the groundwater flow in the area.

Additional study of the area confirmed previous investigation results. On May 6, 2002, following submittal of a Revised Alternative FS, Army requested a permit modification to perform the RA, including partial excavation and incineration (completed in 2000), RCRA cap/cover, passive bioremediation, institutional controls and groundwater monitoring. The final remedy was approved by WDNR and was installed in 2003. The remedy, a passive bio-treatment system (nutrient infiltration) under a RCRA cap/cover, began operation in the fall of 2003 and continues.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: High

CONTAMINANTS OF CONCERN: Explosives, Chlorinated VOCs

MEDIA OF CONCERN: Soil, Groundwater

PHASES	Start	End
RFA	197701	197705
CS	197701	197705
RFI/CMS	198808	199512
DES	199502	200307
IRA	199909	200010
CMI(C)	200303	200405
CMI(O)	200309	200812

RIP: 200405
RC: 200812

CLEANUP STRATEGY

Quarterly infiltration events will continue, along with soil respiration monitoring. The effectiveness of the remedy will be reviewed in 2008 and every 5 years thereafter.

Groundwater monitoring is tracked at BAAP-012 and cap and cover maintenance is tracked at BAAP-035.

BAAP-009
OLD ACID AREA

SITE DESCRIPTION

The Old Acid Area is located in the northwestern area of Badger. Nitric and sulfuric acid manufacturing and handling activities occurred in this area. Spills, leaks, and tank overflows would be expected to contribute nitrate and sulfate to the groundwater, as well as metals (i.e. iron) dissolved from the soil, pipes, and tanks.

Most production buildings were demolished in 2004. Soil sampling after demolition detected lead and arsenic. A temporary soil and vegetative cover was installed in 2004 to prevent fugitive dust releases.

Further investigation to delineate the extent was completed in 2005.

CLEANUP STRATEGY

Remedial design will be completed in 2006. Concrete slab removal is necessary.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: Low

CONTAMINANTS OF CONCERN: Sulfates, Nitrates, Metals, Arsenic

MEDIA OF CONCERN: Soil

PHASES	Start	End
RFA	197701	197705
CS	197701	197705
RFI/CMS	198808	200504
DES	200505	200612
IRA	200408	200410
CMI(C)	200610	200806

RC: 200806

Extent of cleanup area has been expanded. Soil removal, stabilization and on-site land filling are proposed. Cleaned concrete is planned for recycling.

The Lead Burning House (Bldg 523) requires soil remediation for lead. Solvent ASTs in Parcel 04 (Bldg 2546) also require soil remediation for lead. Both will be done in conjunction with the Old Acid Cleanup.

BAAP-012
GROUNDWATER MONITORING ON AND OFF POST

SITE DESCRIPTION

There are two off-post areas of concern. One is located south of Badger, in an area that extends from the installation's southern boundary to the Wisconsin River just below the Wisconsin Power and Light Dam. A groundwater extraction system along the southern boundary prevents further migration (BAAP-033) of the groundwater from the Propellant Burning Ground. The other area is located northeast of Badger near Landfill #5 (BAAP-004) and the Deterrent Burning Ground (DBG, BAAP-006). Capping of the DBG in 2003 has reduced off-post concerns in the northeast.

Three residential water supply wells in the southern off-post area were definitely affected by the organic solvent contamination of groundwater in the Propellant Burning Ground. The affected residences have had their wells extended into the lower, uncontaminated aquifer.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: High

CONTAMINANTS OF CONCERN: Chlorinated Solvents, DNT

MEDIA OF CONCERN: Groundwater

PHASES	Start	End
RFA	197703	197703
CS	197703	197703
RFI/CMS	199107	199512
CMI(C)	199105	200503
LTM	200503	203312

RC: 200503

A Final Off-Post Contingency Plan has been prepared to address potential threats to local groundwater drinking water supplies as a result of Badger-related sources. The actions dictated by the plan are dependent on results from the on-going groundwater monitoring program. The installation-wide monitoring program incorporates both monitoring wells on and off the installation, and private residences outside the installation boundaries.

Detections of DNT in 2004 at the southern boundary and in two of the off-site residential wells, required replacement of two residential wells and installation of three monitoring well nests at Waters Edge subdivision.

In 2006, three additional well clusters were installed in the Windings subdivision and were first sampled in April 2006. DNT detections in off-site monitoring wells south of Badger, west of the Windings, continue.

Quarterly monitoring continues. WDNR reviews and modifies the monitoring program as needed.

CLEANUP STRATEGY

In 2006, an expanded investigation of GW in the Rocket production area and along Highway 12 is planned (funded under BAAP-43). Installation-wide and off-site groundwater monitoring is funded under this site. Lease fees for off-site monitoring wells are paid annually to the landowners.

BAAP-033
PROP BRNG GRD-CONTAMINATED WASTE PITS

SITE DESCRIPTION

The Propellant Burning Ground (PBG) Waste Pits are located in the southwestern portion of Badger AAP. The contaminated waste pits area is approximately 3 acres in size and contains three disposal pits and a large open area used to burn propellant-contaminated materials and organic solvents from the 1950s through the 1970s. The liquid waste materials migrated down through the sandy soil to the groundwater. A groundwater plume containing solvents and DNT has moved south past the installation's boundary.

Soil remedies originally selected in 1994 included soil vapor extraction, then soil removal, washing, and composting. However, the soil washing was shown to be ineffective in bench scale testing in 1997. An SVE system to remove solvents was installed in February 1998 and operated successfully until September 1999 when it was shut down to allow for excavation and installation of the bio-treatment system. Shallow soils contaminated with DNT and metals were removed from the waste pits in the fall of 1999 and a pilot bio-treatment system installed in waste pit 1. The pilot system proved to successfully increase the rate of the naturally occurring biological decomposition of the chemicals in the soil. A full-scale bio-treatment system, currently in operation in all three pits, is expected to be the final soil remedy for this area.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: High

CONTAMINANTS OF CONCERN: Chlorinated Solvents, DNT

MEDIA OF CONCERN: Soil, Groundwater

PHASES	Start	End
RFA	197701	197705
CS	197701	197705
RFI/CMS	198808	200612
DES	198809	200706
IRA	198908	199612
CMI(C)	199510	200806
CMI(O)	200105	201312

RIP: 200806
RC: 201312

Groundwater remediation started in 1990 with the construction of a pump and treat system called the Interim Remedial Measure (IRM) to capture contamination from the source (pits area). Groundwater capture along the southern boundary was begun in 1996, with the construction of the Modified Interim Remedial Measure (MIRM). In 2005 and 2006, additional capture wells were installed within the plume. Bio-fouling of these wells requires additional process measures in 2006 and 2007.

Investigations for other potential sources of solvents in the area were completed in 2002 and 2003. Results were negative.

A revised alternative FS was prepared to finalize the change in the soils remedy. It proposed the SVE system, partial excavation and off-site incineration of soils, bio-

treatment system, and two years of groundwater pump and treat system operation. WDNR is currently reviewing the document.

CLEANUP STRATEGY

Continue to operate the pump and treat systems (IRM/MIRM). The RCRA cap is the next step of the final remedy. The source area groundwater pump and treat system (IRM) is expected to operate until 2008. The boundary groundwater pump and treat system (MIRM) is expected to operate until 2012.

Groundwater monitoring is done as a part of an installation-wide program tracked at BAAP-012.

Obtain regulatory approval for the revised alternate FS and revise permitted remedy.

BAAP-35
PBG LANDFILL/1949 PIT

SITE DESCRIPTION

Adjacent to the waste pits on the west is the area designated as the 1949 pit. This area was apparently used for open burning, and constructed sometime after 1944, and was backfilled and closed by 1962. This area has some heavy metal contamination in the top ten feet of backfilled soil, but no other significant contaminants. A RCRA cap was installed over this area in 1998.

Approximately 400 feet east of the waste pits is a closed landfill (Landfill 1). This was reportedly used between 1944 and 1955 for solid waste and ash disposal. Heavy metals had been detected in the top 10 ft of soil at this site. A RCRA cap was installed over Landfill 1 in 1997.

The 1949 Pit (separate location) was capped in fall 1998 and a closure letter was received from WDNR dated March 8, 1999.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: High

CONTAMINANTS OF CONCERN: Heavy Metals

MEDIA OF CONCERN: Soil, Groundwater

PHASES	Start	End
RFA	197701	197705
CS	197701	197705
RFI/CMS	198808	199512
DES	199509	199807
CMI(C)	199707	199812
LTM	199901	203012

RC: 199812

CLEANUP STRATEGY

Long-term maintenance of the caps will continue for both sites as part of an installation-wide maintenance program. All cap and cover maintenance costs are tracked at this site. Groundwater monitoring is done as part of the installation-wide program. Groundwater monitoring is tracked at BAAP-012.

BAAP-37
POWERHOUSE #1 SOIL OLD FUEL SPILLS

SITE DESCRIPTION

BAAP reported a fuel spill in 1991, south and adjacent to the Old Fuel Oil Tank site by Powerhouse #1. The spill was the result of a subsurface pipeline rupture from a 10,000 gallon aboveground fuel oil tank and was not associated with the old tank. This spill was immediately addressed by Badger under the Wisconsin Underground Storage Tank (UST) regulations. During the course of the site investigation, it became clear that there was significant old fuel contamination in this area that is probably due to underground storage tanks that were previously located alongside Powerhouse #1. This was not included in the RI/FS. The fuel oil in the groundwater and in the soil is not migrating. A product removal system for the groundwater and a bioventing system for the soil have been installed.

Free product was removed from the groundwater in 1996. A soil bioventing pilot test was conducted in the fall of 1997. An active soil bioventing system was upgraded and expanded to become fully operational in March 1999.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: High

CONTAMINANTS OF CONCERN: Fuel Oil

MEDIA OF CONCERN: Soil, Groundwater

PHASES	Start	End
RFA	199106	199108
CS	199205	199408
RFI/CMS	199509	199512
DES	199509	199809
CMI(C)	199405	200606
CMI(O)	200306	200606

RIP: 200606
RC: 200606

Site Closure is underway with preparation of the final report.

CLEANUP STRATEGY

Groundwater monitoring is done as a site-wide program tracked under BAAP-012.

BAAP-40
GRUBER'S GROVE BAY

SITE DESCRIPTION

Gruber's Grove Bay received Badger discharge waters during production. State sampling of sediment in Nov 98 showed elevated lead, mercury, zinc and ammonia. The results were confirmed in 1999 sampling.

The RI was completed in 2000. The selected remedy was dredging of sediments with disposal on the installation. The dredged materials were pumped into fabric tubes for dewatering. The water was treated, and sprayed on agricultural land on the installation. The dry, filled tubes were buried in place in an area north of the settling ponds (Parcel M2). Dredging began in June 2001 and was completed in Nov 2001, with 88,000 cy removed. The geotubes were covered over in September 2002 (Phase I). Bay restoration activities (fish cribs, aquatic plants) were completed in September 2002. Final grading and seeding was completed in July 2003.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: High

CONTAMINANTS OF CONCERN: Mercury, Lead, Copper, Zinc

MEDIA OF CONCERN: Sediments

PHASES	Start	End
RFA	199805	199903
CS	199904	200009
RFI/CMS	199909	200009
DES	200006	200106
CMI(C)	200103	200802

RC: 200802

In early 2003, WDNR sampled the bay sediments and found some elevated levels of metals. Army investigated residual concentrations and toxicity of metals in bay sediments in 2004 and 2005. On May 5, 2005 the WDNR sent a letter to the Army recommending sediment removal or additional ecological risk assessment.

In 2006, the bay is being dredged again, following the similar procedures as used in 2001. Attention will be given to shoreline areas within the dredge boundary. In addition, confirmation sampling will be used to verify completion. The estimate assumes dredging 50,000 cubic yards of sediment.

CLEANUP STRATEGY

In 2007, a soil cover will be placed over the sediment de-watering (laydown) area. WDNR will send a closure letter when satisfied.

BAAP-42
BOX WASHOUT ACCOUNTS 1890-1&2

SITE DESCRIPTION

The Box Wash Repair buildings are located in the north central part of the installation. Buildings 1890-1 and 1890-2 were used to wash, repair, test, stamp, and paint boxes that contained powder. Floor drains from each building connected to sewer pipes that carried propellant residue and wash water to an open ditch in a field.

Sampling during the preliminary Remedial Investigation in the summer of 2004 found propellant residue containing DNTs and solvents in the soil surface of the ditches.

In September 2004, a Remedial Investigation to define the extent of the problem was conducted.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: High

CONTAMINANTS OF CONCERN: DNT, Solvents, PCBs

MEDIA OF CONCERN: Soil

PHASES	Start	End
RFA	198808	199206
CS	199206	199408
RFI/CMS	200310	200505
DES	200501	200612
CMI(C)	200507	200709

RC: 200709

CLEANUP STRATEGY

A remedial design and action plan will be written. The current remedy is to excavate, incinerate and dispose of 257 cubic yards of soil. The appropriate remedial action will be performed as soon as cleanup goals are established and funding is received.

BAAP-43
SITE-WIDE RI

SITE DESCRIPTION

Previous RIs did not address the production areas. Property transfer requires full investigations of these areas. As areas require remediation, new AEDB-R sites will be created to address them.

CLEANUP STRATEGY

Remedial investigation requires new wells and source investigation in FY07-08. Support for government agencies to execute land transfers is shown as cleanup costs. GIS requirements support design efforts.

Conduct RIs as necessary. Funding will be allocated to this site as required.

STATUS

REGULATORY DRIVER: RCRA, Subtitle C: Hazardous Wastes

RRSE: High

CONTAMINANTS OF CONCERN:

MEDIA OF CONCERN:
Groundwater

PHASES	Start	End
RFA	200305	200504
RFI/CMS	200505	200912
DES	200606	200912
CMI(C)	200606	200912

RC: 200912

IRP No Further Action Sites Summary

AEDB-R#	Parcel	AEDB-R Title	Documentation/Reason for NFA	NFA Date
BAAP-002	O	BALLISTICS POND AND DITCHES	WDNR letter dated April 2002 stating NFA.	200204
BAAP-003	K	OLEUM PLANT AND POND	WDNR letter dated March 2005 stating NFA	199512
BAAP-004	K1	EXISTING LANDFILL (LANDFILL #5)	WDNR letter dated Sept 1989 stating NFA	199512
BAAP-005	P4	NITROGLYCERINE POND	WDNR letter dated July 2000 stating NFA	200012
BAAP-008	P2	ROCKET PASTE AREA	WDNR letter dated July 2000 stating NFA	200304
BAAP-010	P3	NEW ACID AREA	WDNR letter dated March 2005 stating NFA	199808
BAAP-011	R	OLD FUEL OIL TANKS	WDNR letter dated Jan 2006 stating NFA	199512
BAAP-013	P3	UNDERGROUND STORAGE TANKS (10)	WDNR letter dated Mar 1999 stating NFA	199008
BAAP-014	V1	LANDFILL 6 (NEW 1989)	USACHPPM review 8/99 – not DERA eligible	199008
BAAP-015	K2	SANITARY LANDFILL #3 (CLOSED)	Capped as part of BAAP-006. NFA	199008
BAAP-016	P3	LANDFILL #4/POWERHOUSE #2	Bldg demolished in 2005. WDNR letter 12/05 NFA	199008
BAAP-020	7	BALL POWDER PILOT PLANT	Study completed. No cleanup required.	199008
BAAP-021	O	BALLISTICS AND TESTING AREA	WDNR letter dated Jan 2005 stating NFA	199008
BAAP-022	O4	BALL PROPELLANT PRODUCTION AREA	Study completed. No cleanup required	199008
BAAP-023	X2	INGREDIENT WAREHOUSE	Study completed. No cleanup required	199008
BAAP-024	Q,U	SMOKELESS POWDER PRODUCTION	Study completed. No cleanup required	199008
BAAP-025	D,R	SALVAGE YARD	USACHPPM review 7/99 – not DERA eligible	199008
BAAP-026	V	HAZARDOUS WASTE STORAGE AREA	WDNR letter dated Oct 2004 stating NFA	199108
BAAP-027	M1	WASTE PROCESSOR	Study completed. No cleanup required	199008

IRP No Further Action Sites Summary (CONT.)

AEDB-R#	Parcel	AEDB-R Title	Documentation/Reason for NFA	NFA Date
BAAP-029	O4	SOLVENT RECOVERY STILL AREA	Study completed. No cleanup required	199008
BAAP-030	R	LABORATORIES BLDG 201, 2556, 4034, 6682	USACHPPM review 7/99 – not DERA eligible	199008
BAAP-031	O	COAL YARD	Study completed. No cleanup required	199008
BAAP-032	O,P3, S	ABOVE GROUND STORAGE TANKS	Study completed. No cleanup required	199008
BAAP-034	H	PBG - -THERM. TREATMENT UNIT/RACETRA	WDNR letter dated Sept 1996 stating NFA	199805
BAAP-035	H	PBG LANDFILL 1/1949 PIT	WDNR letter dated March1999 stating NFA	199812
BAAP-036	V	EAST AND WEST ROCKET DITCHES	WDNR letter dated Sept 1989 stating NFA	200305
BAAP-038	R	TRANSFORMER YARD-PCB IN SOIL	WDNR letter dated Jan1997 stating NFA	199612
BAAP-039	K	OLEUM LANDFILL	WDNR letter dated Apr 2002 stating NFA	199808

Schedule

1981
Installation Assessment, March

1988
Preliminary Assessment/Site Inspection, January

1993
Remedial Investigation, April

1994
Feasibility Study, August

1996
RCRA Permit Modification, January

1997
Landfill 1 Capped, September

1998
1949 Pit Capped, September
East & West Rocket Ditches Remediated, November

1999
Oleum landfill Investigation, August 1999
NG Pond/Rocket Paste Remedial Action, August
Oleum landfill Remedial Actions, December

2000
PBG/DBG/ Remedial Designs, December

2001
Gruber's Grove Dredging, November

2003
Deterrent Burning Ground Capped, September

2004
Follow-on Remedial Investigations, 2003-2004
Transferred Parcels A, B, C, D, DOT, E, and F, September

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates and Associated Sites: unknown

Schedule

Schedule for 5 Year Reviews: 2008

Estimated Completion Date of Cleanup at Installation (including LTM Phase): 2033

General Natural and Cultural Resources Program and Other Cleanup Issues Schedule: Section 106 Tribal Consultation must be completed.

Prior Years Funds

Total Funding up to FY04: $121,594.0K

Year	Site/Project Information	Expenditures	FY Total
FY05			
BAAP-001	RAC	$ 375.0K	
BAAP-001	RI	$ 781.4K	
BAAP-009	RAC	$ 20.0K	
BAAP-006	RAO	$ 4.8K	
BAAP-009	RD	$ 2.2K	
BAAP-012	LTM	$1661.6K	
BAAP-33	RAC	$ 792.7K	
BAAP-33	RAO	$ 721.7K	
BAAP-35	LTM	$ 20.9K	
BAAP-40	RAC	$ 56.7K	**$4437.0K**

Total Funding thru FY05: $126,031.0K

Current Year Requirements

Year	Site Information	Expenditures	FY Total
FY06			
BAAP-001	RAC	$1154.0K	
BAAP-001	RD	$ 250.0K	
BAAP-001	RI	$ 400.0K	
BAAP-006	RAO	$ 18.0K	
BAAP-009	RAC	$1163.2K	
BAAP-009	RD	$ 75.0K	
BAAP-012	LTM	$1285.0K	
BAAP-33	RAC	$1944.0K	
BAAP-33	RAO	$1704.0K	
BAAP-33	RD	$ 302.0K	
BAAP-35	LTM	$ 45.0K	
BAAP-40	RAC	$4843.8K	
BAAP-42	RAC	$ 188.0K	
BAAP-42	RD	$ 25.0K	**$13,396.8K**

Total Requirements FY06: $13,396.8K

Total Future Requirements: **$61,146K**

Total IRP Program Cost *(from inception to completion of the IRP):* **$200,573.8K**

Community Involvement

At each phase of the environmental restoration process, public information meetings have been held at BAAP to keep the community informed of the progress of the cleanup program. In January 1993 the installation began publishing an environmental newsletter to keep the employees, local citizens, and politicians updated on the environmental work underway.

In 1993 the Badger Environmental Board of Advisors (BEBA) was formed to provide a venue for citizens to participate in the cleanup program at the installation. The first BEBA meeting was held in September 1993 and the group has met regularly since then.

The BEBA was formed before the guidelines for Army Restoration Advisory Boards (RAB) were finalized. The BEBA had functioned as the Badger RAB until November 2000, when the BEBA refused the Army's request for the BEBA to comply with current RAB guidance.

The BEBA members were able to transition to an expanded, regulatory-compliant RAB, which started meeting in January 2001 and continues to meet and advise the Army on restoration issues.

In 2002, the Badger Intergovernmental Group (BIG) was formed by GSA to work toward the disposal of Badger Army Ammunition Plant real estate. This group holds public meetings approximately every two months. This provides another opportunity for the community to give input on the actions being taken to ready the installation for new ownership.

In 2005, the Interim Oversight and Management Commission (IOMC) was formed by Sauk County staff to keep all current and future landowners working together to manage the installation lands as a whole. Representatives from local citizen groups are also members. These public meetings provide another form for information exchange between Army and the public.

APPENDIX A
EXCESS PROPERTY
SITES REGULATED UNDER:
AR 385-64

Please note that the sites in this Appendix are under Army Regulation 385-64 (Chapter 8 - Real Property Contaminated with Ammunition and Explosives) and are not eligible for funding under IRP, MMRP, or CC programs.

The Department of Defense is drafting policies and procedures to minimize explosives safety risks and to ensure protection of human health and the environment in present and former DOD ranges. With respect to active and inactive ranges, the DOD Explosive Safety Board is staffing a directive that will address unexploded ordnance explosive safety issues. The Department is also engaged in rulemaking under the Administrative Procedures Act to address response activities on closed, transferred, and transferring ranges. Accordingly, Army policies and procedures in these areas will be provided when the DOD directive and DOD Range Rule are finalized. Until then, practitioners should consult technical and legal personnel for guidance.

CC-J-001
DEMOLITION – PARCEL J ACTIVE INERT DISPOSAL AREA

SITE DESCRIPTION

Parcel J is comprised of 9.9 acres. The area will be used by the Army as an active inert disposal area until it is no longer needed. The types of material disposed here are uncontaminated soils, stone, masonry, concrete, brick, and stumps resulting from ongoing demolition projects in other parcels on the plant.

CLEANUP STRATEGY

When the area is no longer needed for disposal of inert material, a soil cover will be placed over it.

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN
None

MEDIA OF CONCERN: None

PHASES	Start	End
CMI(C)	200911	200912

RC: 200912

CC-K-401
DEMOLITION – PARCEL K4 EAST BALL POWDER® PILOT PLANT

SITE DESCRIPTION

Parcel K4, comprised of the eastern portion of the Ball Powder® Pilot Plant, is located in the north central portion of the Plant. It covers approximately 8.66 acres. The Ball Powder® Pilot Plant was first used in the early 1950s as the sole production area for Ball Powder® and later Blank Fire Ball Powder®. In the late 1980s and early 1990s Ball Powder® was still manufactured at the Ball Powder® Pilot Plant for study purposes.

Five (5) structures including solvent handling and stores buildings, wet processing house and heating plant and a steam pressure reducing station remain in Parcel K4. Of these, three are known to contain explosive materials.

ACM survey has been completed.

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Asbestos, Explosives, Lead-based paint, PCBs, Nitroglycerine

MEDIA OF CONCERN: Structural timber, Soil

PHASES	Start	End
CMI(C)	200512	200706

RC: 200706

CLEANUP STRATEGY

- Equipment Removal
- ACM Abatement
- Explosive Material Removal
- Building Demolition
- Soil Sampling
- Site Restoration

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically. The structures have been surveyed for asbestos and propellant. Concrete will generally be left in place; however some recycling is being explored with the WDNR and the Wisconsin Department of Transportation (DOT) for use as road base material.

Soil confirmation sampling will be performed after demolition is complete for the structures and sewer mains. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-O-301
DEMOLITION – PARCEL O3 BALLISTICS RANGE AREA

SITE DESCRIPTION

Parcel O3 encompasses the Ballistics Range Area and covers about 12.66 acres. Constructed between 1942 and 1944, the Ballistics Range Area had a Rocket Motor Test Range, which test-fired rocket motors and a Ballistics Range, used for firing smaller caliber ammunition.

All 10 buildings in Parcel 03 have been inspected, remediated and removed as necessary.

Post-demolition soil samples have been taken and results are pending.

Orbitec is currently using the Rocket Motor Test Area under a permit. Orbitec must vacate by June 30, 2006, unless Ho-Chunk Nation and Bureau of Indian Affairs (BIA) approve their continued presence.

Work completed:
- ACM Survey
- Equipment Removal
- ACM Abatement
- Soil Sampling

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Asbestos, Propellant, Lead

MEDIA OF CONCERN: Soil, Structural Timber

PHASES	Start	End
CMI(C)	200508	200609

RC: 200609

CLEANUP STRATEGY

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

CC-O-401
DEMOLITION – PARCEL O4 SOLVENT STILL

SITE DESCRIPTION

Parcel O4, the Solvent Still Area, encompasses about 10.01 acres located in the northwest portion of the plant. The Solvent Still Area was used to redistill ether and alcohol recovered from the propellant manufacturing process.
Eighteen (18) buildings remain in this area. Most of the buildings were constructed on at-grade or elevated concrete slabs and were wood framed with transite siding. The ACM Survey has been completed.

CLEANUP STRATEGY

- Equipment Removal
- ACM Abatement
- Explosive Material Removal
- Building Demolition
- Soil Sampling
- Site Restoration

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Asbestos, Nitrocellulose, Alcohol, Ether, Lead

MEDIA OF CONCERN: Structural timber, Soil

PHASES	Start	End
RFA/CMS	200506	200507
CMI(C)	200512	200706

RC: 200706

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically. The structures have been surveyed for asbestos and propellant. Concrete will generally be left in place; however some recycling is being explored with the WDNR and the Wisconsin Department of Transportation (DOT) for use as road base material.

Soil confirmation sampling will be performed after demolition is complete for the structures. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-O-701
DEMOLITION – PARCEL O7 WEST BALL POWDER® PILOT PLANT AREA

SITE DESCRIPTION

Parcel O7 is located in the north central portion of the plant, and covers about 33.04 acres. The parcel encompasses the western part of the Ball Powder Pilot Plant. This area was originally constructed and used in the 1940s for manufacture of EC Propellant. It was modified in the 1950s to accommodate production of Ball Powder® and later Blank Fire Ball Powder®. In the late 1980s and early 1990s Ball Powder® was still manufactured at the Ball Powder® Pilot Plant for study purposes.

A total of 16 structures remain in Parcel O7 including production buildings such as screen houses, rest houses, blending houses, warehouse structures, a liquid waste treatment facility, as well as offices and latrines.

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Asbestos, Propellant, Lead, Nitroglycerine

MEDIA OF CONCERN: Structural timber, Soil

PHASES	Start	End
CMI(C).....	200512.....	200609

RC: 200609

The ACM Survey, Equipment Removal, Explosive Material Removal, Building Demolition and ACM Abatement have been completed.

CLEANUP STRATEGY

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Concrete will generally be left in place; however some recycling is being explored with the WDNR and the Wisconsin Department of Transportation (DOT) for use as road base material.

Soil confirmation sampling will be performed after demolition is complete for the structures. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-P-201
DEMOLITION – PARCEL P2 ROCKET PASTE

SITE DESCRIPTION

Parcel P2, the Rocket Paste Area, encompasses about 163.2 acres located in the central portion of the plant.

All the buildings have been demolished.

CLEANUP STRATEGY

Concrete will generally be left in place; however some recycling is being explored with the WDNR and the Wisconsin Department of Transportation (DOT) for use as road base material.

Soil confirmation sampling is underway.

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Asbestos, Nitrocellulose, 2-NDPA, Lead

MEDIA OF CONCERN: Structural timber, soil

PHASES	Start	End
CMI(C)	200504	200609

RC: 200609

CC-P-301
DEMOLITION – PARCEL P3 NEW ACID AND NG AREA

SITE DESCRIPTION

Parcel P3, the New Acid and NG Area, encompasses about 71.82 acres located in the central portion of the plant.

105 buildings remain in this area. Approximately 27 buildings will require demolition/decontamination. Most of the buildings were constructed on at-grade or elevated concrete slabs.

ACM Survey has been completed.

CLEANUP STRATEGY

- Equipment Removal
- ACM Abatement
- Explosive Material Removal
- Building Demolition
- Soil Sampling
- Site Restoration

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Asbestos, Lead, Nitroglycerine

MEDIA OF CONCERN: Structural timber, Structural Lead Sheeting, Soil

PHASES	Start	End
CMI(C)	200804	201002

RC: 201002

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically where feasible and thermally where necessary depending on the structural integrity and level of propellant contamination. The structures have been surveyed for asbestos and propellant. Concrete will generally be left in place; however some recycling is being explored with the WDNR and the Wisconsin Department of Transportation (DOT) for use as road base material.

Soil confirmation sampling will be performed after demolition is complete for the structures and sewer mains. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-P-401
DEMOLITION – PARCEL P4 NG POND AREA

SITE DESCRIPTION

Parcel P4, the NG Pond Area, encompasses about 47.24 acres located in the central portion of the plant.

Four buildings have been demolished. Most of the buildings were constructed on at-grade or elevated concrete slabs and were wood framed with transite siding. ACM survey, equipment removal, ACM abatement and explosive material removal have been completed.

CLEANUP STRATEGY

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

One building will be left in place.

Soil confirmation sampling is underway. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Asbestos, Propellant, Lead, Nitroglycerine

MEDIA OF CONCERN: Structural timber, Soil

PHASES	Start	End
CMI(C)	200507	200607

RC: 200607

CC-Q-001
DEMOLITION – PARCEL Q SINGLE BASE PROPELLANT FINISHING AREA

SITE DESCRIPTION

Parcel Q, the Single Base Propellant Finishing Area, encompasses about 381.71 acres located in the northwest portion of the plant. The Area was used to produce single base propellants.

115 buildings remain in this area. Approximately 83 buildings will require demolition/decontamination. Most of the buildings were constructed on at-grade or elevated concrete slabs and were wood framed with transite siding.

STATUS

REGULATORY DRIVER: RCRA

PROGRAM: Compliance

CONTAMINANTS OF CONCERN:
Asbestos, Propellant

MEDIA OF CONCERN:
Structural Timber, Soil

PHASES	Start	End
CMI(C)	200504	200709

RC: 200709

CLEANUP STRATEGY

- Equipment Removal
- ACM Abatement
- Explosive Material Removal
- Building Demolition
- Soil Sampling
- Site Restoration

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically. The structures have been surveyed for asbestos and propellant. Concrete will generally be left in place; however some recycling is being explored with the WDNR and the Wisconsin Department of Transportation (DOT) for use as road base material.

Soil confirmation sampling will be performed after demolition is complete for the structures and sewer mains. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-R-001
DEMOLITION – PARCEL R PRODUCTION SUPPORT AND LABS

SITE DESCRIPTION

Parcel R includes production support facilities and three laboratories, one of which (Account #2556) is an active environmental testing facility. Parcel R is 157 acres in size and contains 139 structures, 1 (Bldg. 1995-00) needs demolition.

There are a series of Change Houses and Powerhouse 1 located in the northern section of R. The facility support and maintenance shops, the garages, some of which are active, and the administrative area can be found in the central part of the parcel. The salvage yard, also active, is located in the southern portion.

There are several environmental investigations have been completed in the area including:

STATUS

REGULATORY DRIVER: RCRA

PROGRAM: Compliance

CONTAMINANTS OF CONCERN:
Lead-based paint, Petroleum, Solvents, Heavy Metals, Asbestos

MEDIA OF CONCERN:
Structural timber, Soil

PHASES	Start	End
CMI(C).....	201012	201207

RC: 201207

- Powerhouse 1 (CC-R-002) – Above ground storage tanks.
- Salvage Yard (CC-R-003) – investigation to be completed once the site is no longer needed.
- Tram Repair Shop #522 (CC-R-004) – Oil in building sump.
- Laboratories
- USTs at Powerhouse 1 (addressed as AEDB-R site BAAP-37), garages, fire station, hospital and shops – Addressed under RI Follow-up program (BAAP-001).

The ACM survey has been completed.

CLEANUP STRATEGY

- Equipment Removal
- ACM Abatement
- Building Demolition
- Soil Sampling
- Site Restoration
- Lead Burning House

CC-R-001
DEMOLITION – PARCEL R PRODUCTION SUPPORT AND LABS

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically. The structures have been surveyed for asbestos. Concrete foundations will be left in place.

Soil confirmation sampling will be performed after demolition is complete for the structures and sewer mains. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-R-002
DEMOLITION – PARCEL R POWERHOUSE FUEL ASTS

SITE DESCRIPTION

The Powerhouse Fuel Above-ground Storage Tank (AST) site is located in the northeastern part of parcel R. Parcel R is 157 acres in size and contains 148 structures.

There are three tanks, 403-1, 2, and 3. Each tank has a capacity of 824,000 gallons. The tanks have been emptied to the extent possible by pumping the free product, however there is a substantial quantity of sludge at the base of each tank that will require removal prior to dismantling the tank.

The sludge in the tanks was characterized and recycled. The tanks were emptied and cleaned by a certified cleaner and final inspections were performed by a certified inspector.

This site is being funded with prior year funds.

STATUS

REGULATORY DRIVER: RCRA

PROGRAM: Compliance

CONTAMINANTS OF CONCERN:
Lead-based paint, Petroleum, Heavy Metals

MEDIA OF CONCERN:
Structural timber, Soil

PHASES	Start	End
CMI(C)	200507	200512

RC: 200512

CC-R-003
DEMOLITION – PARCEL R SALVAGE YARD

SITE DESCRIPTION

The Salvage yard site is located in the southern part of parcel R. The Salvage Yard is approximately three acres in size. The area is currently active and has been utilized as a salvage yard since 1941. At this location, decontaminated metal scrap, wood, concrete, rubber and miscellaneous equipment is stored prior to sale.

The Salvage Yard was included in the Environmental Baseline Survey (Plexus, 1999) and was classified as a Category 7 site (Section 25) because complete information on spills, accidents and potential environmental contamination was not available. Category 7 is defined as an area that has not been evaluated or requires additional evaluation. Sampling was conducted in October of 2003 in accordance with Section 5.4 in the following document: "Proposal for Further Investigation of January 1999 Environmental Baseline Survey Recommendations", Olin Corporation (Olin), May 1999.

STATUS

REGULATORY DRIVER: RCRA

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: SVOCs, Heavy Metals

MEDIA OF CONCERN: Soil

PHASES	Start	End
DES	200907	200911
CMI(C)	200911	200912

RC: 200912

CLEANUP STRATEGY

The results of the 2003 investigation indicate heavy metals (primarily lead) and semi-volatile compounds contamination. Further investigation to fully characterize the site for cleanup is necessary; however, since the area is still active, the final investigation will be conducted after the site is closed. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-R-004
DEMOLITION – PARCEL R TRAM REPAIR SHOP #522

SITE DESCRIPTION

The Tram Repair Shop is located in Parcel R.

CLEANUP STRATEGY

Oil in the sump will need to be removed and disposed of.

This site is funded with prior year funds.

STATUS

REGULATORY DRIVER: RCRA

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: POL Constituents

MEDIA OF CONCERN: Soil, Structural timber

PHASES	Start	End
CMI(C)	200506	200508

RC: 200508

CC-S-001
DEMOLITION – PARCEL S BALL POWDER® PRODUCTION AREA

SITE DESCRIPTION

Parcel S includes Ball Powder® production area. Parcel S is 235 acres in size and contains 85 structures. 35 structures require decontamination/demolition. The Ball Powder® Production Area was constructed in 1954 - 1955 and operated during the Korean and Vietnam conflicts.

The Ball Powder® propellant production area is located in the west central portion of the Badger facility. The powder was produced in batch lots and pumped slurry to each successive process stage. Each individual processing step is located in a separate building 150 to 500 feet apart depending on the maximum amount of powder that would be present in a building at any time. The facility had a design capacity of 2.7 million pounds per month. The buildings are steel framework construction covered with asbestos wall panels. ACM survey has been completed.

STATUS

REGULATORY DRIVER: RCRA

PROGRAM: Compliance

CONTAMINANTS OF CONCERN:
Lead-based Paint, Explosives, Asbestos, Nitroglycerine, PCBs

MEDIA OF CONCERN:
Asbestos, Steel, Concrete, Soil

PHASES	Start	End
CMI(C)	200610	200709

RC: 200709

CLEANUP STRATEGY

- Equipment Removal
- ACM Abatement
- Building Demolition
- Soil Sampling
- Site Restoration

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically where feasible and thermally where necessary. The structures have been surveyed for asbestos. Concrete foundations will be left in place.

Soil confirmation sampling will be performed after demolition is complete for the structures. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-U-001
DEMOLITION – PARCEL U BALL POWDER® AND SINGLE BASE FINISHING AREA

SITE DESCRIPTION

Parcel U, the BALL POWDER® and single base finishing Area, encompasses about 196.27 acres located in the northwest portion of the plant. The NC Production Area was used to produce nitrocellulose.

Eighty-eight (88) buildings remain in this area. Approximately 58 buildings will require demolition/decontamination. Most of the buildings were constructed on at-grade or elevated concrete slabs and were wood framed with transite siding.

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN:
Asbestos, Propellant, Lead, PCBs

MEDIA OF CONCERN:
Structural timber, Soil

PHASES	Start	End
CMI(C)	200504	200809

RC: 200809

CLEANUP STRATEGY

- Equipment Removal
- ACM Abatement
- Explosive Material Removal
- Building Demolition
- Soil Sampling
- Site Restoration

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically. The structures have been surveyed for asbestos and propellant. Concrete will generally be left in place; however some recycling is being explored with the WDNR and the Wisconsin Department of Transportation (DOT) for use as road base material.

Soil confirmation sampling will be performed after demolition is complete for the structures and sewer mains. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-V-001
DEMOLITION – PARCEL V EAST AND WEST ROCKET

SITE DESCRIPTION

Parcel V is comprised of the former rocket production area, constructed in 1942. The production area is divided into east and west production halves with common support structures in the center. There are a total of 348 structures associated with this area including process and support buildings. 237 buildings require demolition/decontamination. Both East and West Rocket were used during WWII, however only the West Rocket Area was used after WWII, and East Rocket was no longer maintained.

Wastewater from Rocket Area operations was discharged via sewer laterals into a series of open ditches. The ditches were remediated in the fall of 1998 as AEDB-R site BAAP-36.

All funding for this effort has been received.

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Propellant, Heavy Metals, Lead-based Paint, Asbestos, Nitroglycerine

MEDIA OF CONCERN: Soil, Structural timber

PHASES	Start	End
CMI(C)	200503	200706

RC: 200706

CLEANUP STRATEGY

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically. The structures have been surveyed for asbestos and propellant. Concrete will generally be left in place; however some recycling is being explored with the WDNR and the Wisconsin Department of Transportation (DOT) for use as road base material.

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Soil confirmation sampling will be performed after demolition is complete for the structures. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-V-101
PARCEL V1 LANDFILL #6

SITE DESCRIPTION

Parcel V1 consists of Landfill #6, allowing for monitoring and future expansion. Parcel V1 is 71.56 acres in size and contains 3 structures. The current footprint of landfill #6 is approximately 600' x 400' or 5.5 acres. A planned expansion, of which one phase has been completed will add 1,000,000 cubic yards of capacity and will yield a footprint of 1000' x 600' or roughly 14 acres. The purpose of the expansion is to accommodate the disposal of plant structures that cannot be recycled during demolition.

Landfill #6 was originally constructed in the summer of 1989 as a municipal landfill but was re-categorized as a demolition site when Subtitle D was promulgated. Putrescible wastes have been segregated and disposed of off-site as a result. The site expansion has been designed to meet WDNR demolition site standards. The first phase of the expansion was completed in the fall of 2004 and is located 100 feet north of the original site.

STATUS

REGULATORY DRIVER: NR 500

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Lead-based Paint, Heavy Metals, Asbestos, PCBs

MEDIA OF CONCERN: Soil

PHASES	Start	End
CMI(C)	200404	201012
CMI(O)	200404	201212

RC: 201212

To conserve landfill space, non-contaminated inert waste materials such as brush, untreated lumber and unpainted concrete have also been segregated and are placed in an inert waste disposal area located immediately south of the central Rocket Area.

CLEANUP STRATEGY

Once demolition has been completed, the landfill will be capped and closed in accordance with the WDNR 500 series of regulations governing the design, operation and closure of landfills in Wisconsin.

CC-X-201
DEMOLITION – PARCEL X2 B AND C NITROCELLULOSE LINES

SITE DESCRIPTION

Parcel X2 includes the B and C Nitrocellulose Production Lines. Parcel X2 is 79.41 acres in size and contains 132 structures. 78 structures require decontamination/demolition.

The B and C Nitrocellulose Production Lines were constructed in 1942 and operated during WWII, Korea, and Vietnam. The buildings are multi-story wood construction with friable asbestos insulation and transite siding. The ACM Survey has been completed.

CLEANUP STRATEGY

- Equipment Removal
- ACM Abatement
- Building Demolition
- Soil Sampling
- Site Restoration

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Lead-based Paint, Heavy Metals, Propellant, Asbestos, PCBs, Nitrocellulose

MEDIA OF CONCERN: Structural timber, Soil

PHASES	Start	End
CMI(C)	200804	200909

RC: 200909

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically where feasible and thermally where necessary. The structures have been surveyed for asbestos. Concrete will be left in place.

Soil confirmation sampling will be performed after demolition is complete for the structures and sewer mains. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-Y-101
DEMOLITION – PARCEL Y BALL POWDER® AND D, E, F NITROCELLULOSE LINES

SITE DESCRIPTION

Parcel Y includes D, E, and F Nitrocellulose Production Lines. Parcel Y is 124.84 acres in size and contains 166 structures. 59 structures require decontamination/demolition.

The D, E, and F Nitrocellulose Production Lines were constructed in 1942 and operated during WWII, Korea, and Viet Nam. The buildings are multi-story wood construction with friable asbestos insulation and transite siding. The ACM survey has been completed.

CLEANUP STRATEGY

- Equipment Removal
- ACM Abatement
- Building Demolition
- Soil Sampling
- Site Restoration

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: Lead-based Paint, Heavy Metals, Asbestos, Nitrocellulose, PCBs

MEDIA OF CONCERN: Soil, Structural timber,

PHASES	Start	End
CMI(C)	200904	201009

RC: 201009

Demolition will proceed by first performing ACM abatement and equipment removal, then demolition, which will be performed mechanically where feasible and thermally where necessary. The structures have been surveyed for asbestos. Concrete will be left in place.

The work to Investigate and remediate/dismantle sewers and dismantle the Industrial Water System will be addressed under CC Z-001 and CC Z-002.

Soil confirmation sampling will be performed after demolition is complete for the structures. A sampling plan will be developed based on the number and type of structures as well as their role in the manufacturing process. Once sampling has been completed and any contaminant residuals have been addressed, site restoration work will be performed.

CC-Z-001
SEWER REMEDIATION

SITE DESCRIPTION

This is an installation-wide site to address decontamination of sewers. Accessible sewer lines were hydro-jetted and videotaped. No breaks were identified.

CLEANUP STRATEGY

Remediation requirements and plans will be prepared when funding is available.

STATUS

REGULATORY DRIVER: AR 385-64

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: NA

MEDIA OF CONCERN: Sewer Lines

PHASES	Start	End
CMS/RFA	200005	200508
CMI(C)	200808	201012

RC: 201012

CC-Z-002
INDUSTRIAL WATER SYSTEM

SITE DESCRIPTION

This is an installation-wide site to address abandonment of well #4, transfer of well #3, abandonment of industrial wastewater treatment plant and the removal and abandonment of hydrants.

The potable water system needs to be extended to provide fire protection.

CLEANUP STRATEGY

Abandon the well, hydrants and close off the reservoirs. Prepare documentation. Cleanup of settling basins at industrial wastewater treatment plant. Ownership of well #3 needs to be determined.

STATUS

REGULATORY DRIVER: NR 200 and 140

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: None

MEDIA OF CONCERN: Water Lines, Wells and Industrial Sewers

PHASES	Start	End
CMI(C)	200608	201012

RC: 201012

CC-Z-003
PROGRAM MANAGEMENT

SITE DESCRIPTION

This site was created to track the program management funding, facility maintenance, security, GIS support of operations and compliance permitting.

STATUS

REGULATORY DRIVER: None

PROGRAM: Compliance

CONTAMINANTS OF CONCERN: None

MEDIA OF CONCERN: None

PHASES	Start	End
CMI(O)	200608	201212

RC: 201212

CC Past Phase Completion Milestones

FY2004
• Transferred 2087.33 acres to USDA in September

FY2005
• Transferred 61.04 acres to USDA in August

FY2006 and future
• Transfers held up pending completion of Section 106 consultation